

# ***Eubios Journal of Asian and International Bioethics***

**EJAIB Vol 19 (3) May 2009**

**ISSN 1173-2571**

Copyright ©2009 Eubios Ethics Institute (All rights reserved, for commercial reproductions).

**Eubios Ethics Institute World Wide Web: [www.eubios.info/index.htm](http://www.eubios.info/index.htm)**

Official Journal of the Asian Bioethics Association (ABA)

## ***Contents***

	page
Editorial	65
Reflections about Bioethics and Citizenship Revealed from the Historic Evolution of Accusations against Doctors on a Brazilian Council of Medicine	66
- Nedy Maria Branco Cerqueira Neves	
Corpses and Philosophy	71
- Masayuki Yoshida	
Ethical Perspectives: An Integral Part of Biotechnology Teaching in the Developing Nations	73
- Chandralekha Duttgupta and Subhajyoti De	
Rural-Urban Differentials of Contraceptives Use in Bangladesh	77
- Md. Mahfuzar Rahman, et al.	
The difficult surgical patient' in a developing world context. How cultural beliefs, local customs and superstition affect surgical treatment	81
- David O. Iabor	
Ethical and Legal issues in Pain management and End of Life Care in USA	83
- Vijay Rajput	
A Review of Environmental and Health Effects of Nichemtex Textile Industry on Residents: An Evaluative Study	86
- P.O. Olawuni	
Universalism and Ethical Values for the Environment	90
Energy Flow, Environment and Ethical Implications for Meat Production	91
Water Ethics and Water Resource Management	92
Call for Contributions on Outline of EETAP reports WG2: Ethical worldviews of nature	93
WG10 Ethical frameworks for research agendas and policy	93
Other information and conferences	94
Order form	96

## **Editorial**

This issue of *EJAIB* presents the executive summaries of three of the draft reports of the Ethics of Energy Technologies in Asia and the Pacific (EETAP) Project of UNESCO Bangkok, which are open for consultation and open peer review on the website. The summaries presented in this issue include: "Universalism and Ethical Values for the Environment", "Energy Flow, Environment and Ethical Implications for

Meat Production", and "Water Ethics and Water Resource Management". Several other reports will also be completed in draft form very soon.

There is also a Call for Contributions on developing reports and other drafts on-line at <http://www.unescobkk.org/rushsap/energyethics/>. Outlines of EETAP report WG2: "Ethical worldviews of nature", and WG10 "Ethical frameworks for research agendas and policy" are given as examples, and immediate contributions to these emerging reports are invited. These and other reports will be discussed at the forthcoming session of the World Commission on the Ethics of Science and Technology (COMEST), to be held in Kuala Lumpur, 15-19 June. COMEST will be finalizing its report on Ethics of Climate Change, which is on-line for comment as well.

In this issue there is a paper from Nigeria examining the opinions of persons who were affected by industrial pollution. Many cases can be found around the world, which call for greater consultation with communities, as well as enforcement of ethical and legal standards to protect the environment, and the health of affected persons. I also refer readers to a special issue of *Lancet* in May 2009 which has a report on the health implications of climate change (available for free on-line).

Also in this issue are papers discussing approaches to resolving problems in the doctor-patient relationship, with an analysis of litigation trends in Brazil as opposed to the paper by David Iabor which examines how cultural beliefs lead to contrasting views of what is medically successful in Nigeria. There is also a paper by Vijay Rajput on ethics of pain management in the USA which is another variable that can affect satisfaction with health care.

The paper by Masayuki Yoshida looks at the philosophy of corpses, and how to respect the dead body. We also have papers on teaching ethics of biotechnology, and the patterns in the use of contraception in Bangladesh. We can see the diversity of images of bioethics and approaches in different countries. I invite readers to submit papers and comments. The next issue will include reports from the ABC10 conference in Iran, and readers are invited to submit papers from that conference for publication.

-Darryl Macer

Editorial address:

Prof. Darryl Macer, RUSHSAP, UNESCO Bangkok,  
920 Sukhumvit Rd, Prakanong, Bangkok 10110, THAILAND  
Fax: Int+66-2-664-3772 Email: d.macer@unesco.org

# Reflections about Bioethics and Citizenship Revealed from the Historic Evolution of Accusations against Doctors on a Brazilian Council of Medicine

- Nedy Maria Branco Cerqueira Neves  
Doutoranda do Programa de Pós-graduação de Medicina e Saúde, da Faculdade de Medicina da Bahia, da Universidade Federal da Bahia, Brasil (PPgMS-FMB-UFBA).  
E-mail: nedynes@terra.com.br

## Abstract

Doctors in Brazil are subject to civil, penal and ethical-professional responsibility in their professional activities. In the ethical-professional sphere, the law gives the Councils of Medicine the exclusive right to inspect professional practice and judge ethical infractions committed by doctors, based on the *Código de Ética Médica* (Code of Medical Ethics). In medical practice, conflicting situations often arise that may be responsible for the accusations made in the Councils of Medicine. Bioethics enables a critical reflection that embraces the plurality. The objective of this study is to analyze, from the perspective of bioethics, the evolution of citizenship, as seen through the content of accusations against doctors in the State of Bahia.

A retrospective, descriptive, cross-sectional study was carried out through documentary research. Of the total accusations, there were 204 between 1970/1979, 394 between 1980/1989, 919 between 1990/1999 and 2,212 between 2000/2006. The most frequent place of the occurrence was the capital; there was no difference between public and private institutions; the same frequency was observed in relation to gender; and 17 groups were categorized.

There was a significant increase in the number of accusations over time, which was in accordance with the literature. Many studies affirm that the main factor responsible for the growth is the poor quality of relations between the doctor and the patient. A probable cause of the change in behaviour of Brazilian society is the Federal Constitution (1988) and the Consumer Code (1990). The study suggests that the principle of justice should seek to protect the vulnerability of society and the proposal of a Bioethics of Protection and Intervention that strives for social justice, through State intervention. The number of accusations against doctors has increased tremendously, with the advances in awareness of the rights of citizens from the 1990s. The categories related to praxis were considered atemporal, while others were distributed with higher frequency in the more recent years.

**Keywords:** bioethics, citizenship, codes of ethics, liability.

## Introduction

In Brazil, doctors are subject to three spheres of responsibility in their professional activities: civil, penal and ethical-professional. These three spheres are independent, despite the possibility of the result of one field can be used another (Marques Filho, 2008). The three factors that must be present to constitute civil liability of the doctor are: voluntary conduct, unjust damage and causal nexus. The doctor's responsibility is subjective, based on guilt through incompetence, negligence and imprudence (Kfoury Neto, 2007).

In the ethical-professional sphere, the Brazilian law gives the Councils of Medicine the exclusive right to inspect professional practice and judge ethical infractions committed by doctors who are regularly practising the profession in the country, based on the Code of Medical Ethics (Seugling, 2007). The Councils of Medicine are federal authorities created by Law (Law no. 3,268 of 30 September 1957) and financed through the compulsory contributions of the doctors.

The country has seen eight codes of medical conduct. The first was published in 1867 and the last - still in force - in 1988 (Moura Fé, 2000). The current Code of Medical Ethics was instituted by Federal Council of Medicine (CFM) Resolution no. 1.246/88 (Brazil, 1988), has 145 articles divided into 14 chapters, and is legally binding. The Ethical-Professional Process is wrapped in procedural secrecy and is of a moral nature, with an administrative bias supported by Law 3,268/57 (Brazil, 2001) and by the Federal Constitution (Undelsmann, 2002).

Medicine is arguably the most regulated profession in the world, and from the standpoint, it is a high-risk occupation for those who practice it (Zambiere Jr, 1995). Thus, the doctor lives with the expectation of being sued (Dodd, 1996).

In medical practice, it is often necessary to deal with conflicting situations in the ethical-legal field (Sanguinetti, 1988; Brennan, 1991; Leape, 1991). Thus, unsatisfactory or troubled doctor-patient relations are largely responsible for the accusations made in the Councils of Medicine (D'Acampora, 1996; Gomes, 2001).

In the literature, there have been various studies on lawsuits against doctors (Falcão, 1993; D'Ávila, 1998; Morrison, 1998; Maia, 1999; Clay, 2003; Boyaciyani, 2005; Khalig, 2005; Bitencourt, 2007; Seugling, 2007) and in general, they describe variables relating to the profile characteristics of doctors charged in ethical-professional lawsuits.

Various hypotheses exist to explain the accusations against doctors; the fact that it is an activity which involves risk, inadequate working conditions, excessively high numbers of patients, and a lack of understanding among colleagues (Seugling, 2007). On the other hand, doctors are often sued under circumstances in which they are innocent, suggesting that the motivation may not always be related to the fact in itself (Taragin, 1994). The common view is that a good doctor-patient relationship makes an accusation against the doctor less likely (Charles, 1993; Penchansky, 1994). Dialog is essential in this process, enabling better understanding and trust (Bitencourt, 2007).

In this troubled context, bioethics enables a critical, all-embracing and plural reflection. The objective of this study is to analyze, from a perspective of bioethics, the evolution of citizenship translated in the context of the accusations against doctors in the State of Bahia.

## Methods

This is a retrospective, descriptive cross-sectional study, carried out through documentary research. The study material consisted of the analysis of accusations received in the Regional Council of Medicine of the State of Bahia (Credeb). The period determined was 1958 to 2006. This choice was based on the creation of the Credeb (1958) and the presentation of the PhD project (2006) to the Postgraduate Program in Medicine and Health (PPgMS) of the Bahia School of Medicine (FMB) of the Federal University of Bahia (Ufba).

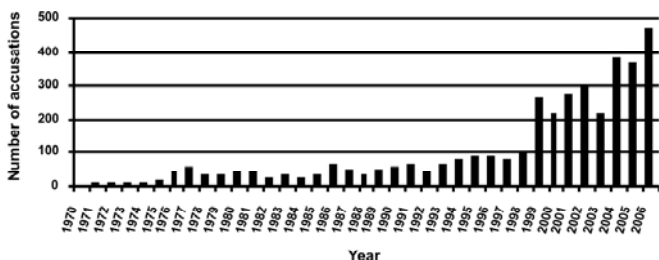
An overall annual investigation was carried, out of accusations made to the Credeb in the period studied. Ten accusations were heard per year, by random draws. For each accusation, the data were collected by means of a specific protocol designed for this study. To categorize the accusation, the following variables were considered: criteria for inclusion (accuser: if an individual person); and exclusion (accuser:

whether ex-officio, lawyer, company, institution, accusation appeared in the media or appeals); place of occurrence (capital or interior); institution (public or private); gender of the accuser(s); and investigation of the accusations in terms of the ethical relevance of their content. The accusations were grouped into categories according to the method proposed by Minayo (2004), with classification by themes and dividing up the texts into fragments for subsequent interpretation of the results.

The author personally selected the accusations. The data collection was carried out only after obtaining authorization and approval from the director of the Cremeb. All the necessary steps were taken to ensure legal secrecy. The research protocol was regularly forwarded to and approved by the Research Ethics Committee of the Ufba. The quantitative data were analyzed using the statistical analysis program SPSS, version 10.0 for Windows (SPSS Inc. Chicago, Illinois).

**Results**

Due to a fire in 1969, the search was restricted to 36 years, from 1970 to 2006, and in this period, a total of 3,729 accusations were evaluated (Figure 1).



**Figure 1** – Number of accusations per year in the study period, from 1970 to 2006.

Of the total accusations, there were 204 (5.8%) between 1970 and 1979, 394 (10.9%) between 1980 and 1989, 919 (24.9%) between 1990 and 1999 and 2,212 (58.4%) between 2000 and 2006. Of the accusations selected, only 180 were selected through criteria of inclusion and exclusion. In the categorization phase, 34 accusations were excluded for various reasons, such as cases where the accused was not a doctor, and repeated accusations. The final sample included 146 accusations (Figure 2).

Decade	Number of Accusations	Accusations Selected	Sample
1970-1979	204	13	11
1980-1989	394	31	24
1990-1999	919	74	54
2000-2006	2.212	62	57
<b>Total</b>	<b>3.729</b>	<b>180</b>	<b>146</b>

**Figure 2** – Number of accusations, accusations selected and sample per decade.

The most frequent place of occurrence of the facts was the capital, 68% (99), which made up more than half of the accusations. In the interior there were just 26% (38) and in 6% (9) the place was not identified.

There was little difference between the occurrence of episodes in public (32%) and private (40%) institutions, with just a slight advantage for the latter (7.5% higher), and 28.1% of the cases were not identified.

In relation to the accusers, practically the same frequency was observed in relation to gender; with 48.6% being men, 46.6% women and 4.8% unknown.

The categories were ordered according to the statement given in the accusation, listing 17 categories in all. The category with the highest number of cases was denominated malpractice damages, with 59 cases. This was followed by 26 cases in the category of refusal to attend the patient, 22 cases of rudeness, and 14 conflicts of interest. The remaining categories, with smaller numbers, were: issue of a false medical statement (05), questioning the diagnosis (04), sexual harassment (03), abandonment of shift (03), questioning the medication (03), prejudice (03), availability and use of prosthesis (02), failure to carry out proposed surgery (02), and others (05).

**Discussion**

In relation to the number of accusations found in the period studied, it can be inferred that the increase was immense. Just 5.8% of the total accusations occurred in the first decade studied (1970-1979), with 10% in the second year (1980-1989) and 24.9% in the third year (1990-1999). The majority of the accusations are concentrated in the last six years studied (2000-2006), making a total of 2.212 accusations out of the total of 2,729, i.e. 58.4%. It was observed that the last period had more accusations than the other three put together, with an increase of nearly 100% in each decade.

This result was in accordance with the findings of the other Brazilian states. In Rio de Janeiro there was a significant increase; 267 records in 1988, 428 in 1991 and 524 in 1992 (Falcão, 1994). In Santa Catarina only three accusations are recorded for the 1960s, but by the 1980s, this number had doubled (D’ávila, 1998). In the State of São Paulo there was also a major increase over the years: in the period 1994 to 2004, a total of 24,678 occurrences were registered (Boyaciyan, 2006).

Most researchers affirm that the main factor responsible for this growth is the poor quality of the relationship between the doctor and the patient (França, 1999; Gotschlich, 1993; Montoya, 1990). There are other factors that have contributed to this growth, such as a better awareness of the population concerning their rights, and the worsening of working conditions. Also highlighted is the lack of training of doctors during graduate and postgraduate courses (Kfourri Neto, 1999).

Another factor believed to have caused a change in behavior in Brazilian society was the promulgation of the new 1988 Federal Constitution (D’ávila, 1998). Also, it is interesting to note that in 1991, the Public Prosecution Service was created, as a consumer defense body with wide acceptance by the population. The creation of the Consumer Code (1990) also had a significant impact on this context, influencing and raising awareness among citizens. It should be emphasized that the Brazilian Federal Constitution, in its article 196, establishes that: “(...) health is the right of all and the duty of the State”.

Studies carried out in other Brazilian states (Falcão, 1993; D’Ávila, 1998; Boyaciyan, 2006; Marques Filho, 2008) reveal high numbers of ex-officio accusations in the initial years studied. In this type of accusation, the accuser is not an individual person. These results corroborate the data found in this study, was restricted only to accusations made by individuals, for which reason the total of 10 accusations per year was not reached. These episodes lead to reflection on the time of existence of the Councils of Medicine, which mostly coincides with the period of the military dictatorship (1964-1985). It could be said that in that period, the population was afraid to make any type of accusation, and after 1990, following the election of the first President by direct vote and the return to a Democratic State of Law, there was a significant increase in this number.

According to the world literature, an increase in accusations against doctors is observed. In Chile, according to a study by Gotschlich (1993), in the hundred years prior to 1983 there were only two lawsuits filed against doctors, but since then, the number of accusations has increased significantly. Although on the rise, the Brazilian figures are still very low compared with the numbers of lawsuits filed against doctors in the United States and England (Maia, 1999). A study carried out by a private organization in the United States, the Public Citizen's Health Research Group, revealed that the number of doctors who had their licenses revoked or suspended, or their practice restricted, increased from 1,974 in 1992 to 2,190 in 1993, showing an 11% increase in just one year (Cervantes, 1996). Data from the National Health System in Great Britain show a figure of 5,419 to 6,979 new accusations against doctors between 1990 and 1991 (Fenn, 1994).

Jacobson states that there was a considerable increase in the number of accusations against doctors in the United States from the 1970s. According to the author, the analysis of condemnatory legal verdicts in San Francisco, California, and Cook County, Illinois, increased three and four-fold in the periods 1975 to 1979 and 1980 to 1984, respectively (Jacobson, 1989). From 1984 to 1994 an average of 594 new accusations per year were filed against doctors at the Maryland's Health Claims Arbitration Office and in 1994, the State of Maryland, USA, had 14,123 practicing doctors, therefore we can conclude that 4% of the doctors in that state are accused each year (Dodds, 1996). These data are cause for concern, as a compensation industry is observed resulting from condemnatory verdicts in countries like the United States.

In relation to geographical origin of the accusations, this study indicates that the vast majority - 67.8% - were presented in the capital and 26.0% occurred in the interior, with 6.2% being unidentified. D'Ávila describes that in Santa Catarina, the majority of doctors who have committed infractions in the State are from the interior (D'Ávila, 1998). In São Paulo, the data are similar to those of Bahia, with a higher incidence observed in the capital (Boyaciyan, 2006). It should be noted that the majority of the Brazilian medical population is located around the capitals. In Salvador this figure is 69.3%. The ratio of doctors to the population is 2.7% in the capital and 0.2% in the interior (Machado, 1996). On reason for the fact that most of the accusations come from the capital is the higher concentration of doctors in the region. Schneider, meanwhile, believes that this difference can be explained by the higher levels of development, access to information, higher levels of education and a greater awareness of rights and duties (Schneider, 2004).

In view of these results, a reflection emerges of the relationship between bioethics and citizenship, based on the accusations made during the period studied. Some academics argue that the principles of bioethics promoted by the United States as unacceptable in other cultures (Mbugua, 2009). According to Siqueira (2008), the model presented by the principalist ethic became sufficient to resolve doubts in more complex clinical situations. The mere application of the principles proposed by Beauchamp and Childress (1994) has become an insufficient tool for resolving the moral conflicts of today (Siquiera, 2008).

Because nowadays, rights have become abstract, the individual feels that only objective rules can give him safety and stability. In this context, bioethics should not be seen merely as an accumulation of rules, as it brings at its very heart the idea that the human (doctor-patient) relationship is defined in terms of responsibility for the other. This relationship cannot be codified, as it is a form of human experience (E Silva, 2007; Durant, 1995). The bioethical debate is of great value for the construction of normativity, without necessarily standardizing bioethics (Vieira, 2007).

Thus, given that the Code of Medical Ethics is affirmative in nature, despite its humanist context (Neves, 2008), and enables the claims presented to be included in a normative way, unlike bioethics which offers reflection as a subjective and private substrata for each case.

The Universal Declaration on Bioethics and Human Rights (UDBHR) can consubstantiate reflection on the categories based on content analysis. However, this declaration can be interpreted from different focuses, according to each community (Macer, 2009). It is believed that the different interpretations do not compromise the evolution of citizenship, enabling the regions of the world belonging to the different stages of social evolution to be analyzed.

It is important to reflect on the vulnerability of the individuals who present claims. To overcome this condition, State intervention is needed if social justice is to prevail, such as proposal for the Bioethics of Protection and Intervention. Another characteristic is the defense of dignity of human dignity, which is directly associated with respect for the individual, groups, and social sectors (Siqueira, 2007). Schramm (2003) defends the bioethics of protection and intervention, conceiving of a modern democratic State as one which has the competence to protect the basic rights of its citizens. It is clear that the fact of belonging to a certain social class can accentuate a subject's vulnerability still further. Hence the protective and intervening role of the State, to ensure that the citizen does not remain isolated in that condition, and promote quality of life (Habermas, 2002; Schramm, 2003).

In this study, there was a predominance of claims relating to quality of attendance, i.e. praxis, whether due to medical malpractice or refusal to attend the patient and rudeness. Although lower in number, other claims were also related to the same problem, such as abandonment of the patient, questioning the diagnosis and treatment, availability and use of a prosthesis, failure to carry out the proposed surgery or surgery carried out by another doctor and unsatisfactory consultation. All the elements demonstrate an increased awareness by citizens, of their right to an adequate medical service as part of the Federal Constitution.

Also in relation to the categories, the positioning of the accusers is observed in issues related to prejudice, sexual harassment, lack of clarification and conflict of interest. All these elements have been seen in recent decades, in a growing evolution of knowledge relating to individual and collective rights.

The data obtained show the appropriation of the morality in force by the population throughout the period studied, i.e. the notion of what is right and wrong in a certain conduct or relationship (Gert, 1970; Pellegrino, 1978). Morality is understood as a "set of rules of conduct considered as valid, whether in absolute form or for any time and place, whether for a group or for a specific person" (Cunha, 1986). In this sense, the categorical imperative of Kant (1724-1804) proposes that every individual should act as if the maxim from which you act were to become through your will a universal law. (Kant, 2003; Blackburn, 1997; Collinson, 2004).

In virtue of the above, one can question whether there is a regional bioethic, a Brazilian bioethic. More in-depth studies are therefore suggested, based on the field of local bioethics and comparing these with other regions of the world. Thus, there is a need for new research focusing on bioethics and citizenship.

Greater investment in the ethical-humanist training of the doctor is essential, emphasizing the development of communication skills and interpersonal relations, committed to the recommendations given in the Code of Medical Ethics. It is important to attribute the contribution of this work in the teaching, both at graduation level and in continuing professional development through courses and congresses.

This systematic guideline may help prevent ethical-legal disputes.

## Conclusion

The number of accusations has increased significantly since the 1990s. Compared with the typology related to historical distribution, it is observed that the types related to the praxis are considered atemporal, while the other types are distributed with greater frequency in more recent years, particularly from the 1990s.

Although Brazil does not have a homogenous culture, and the way in which people think and act is different, analysis of the results of this study indicates a consistency between these findings other regions of the country.

The Federal Constitution promulgated in 1988, and the creation of the Consumer Code (1990), played an important role in teaching citizens their rights, enabling greater respect for human dignity and offering significant support for raising awareness.

In the Brazilian social context, the subject is becoming ever more demanding with regard to the right to win mechanisms that increase human dignity and citizenship. From this perspective, the significance of the accusations registered is seen as a way of consolidating social thinking.

## References

1. Beauchamp T, Childress J (1994). *Principals of Biomedical Ethics*, 4<sup>th</sup> edition, New York, Oxford University Press.
2. Bitencourt AGV, Neves NMBC, Neves FBCS, et al (2007). Análise do erro médico em processos ético-profissionais: implicações na educação médica. *Rev Bras Educ Med*, 31(3): 223-228.
3. Blackburn S (1997). *Dicionário Oxford de filosofia*. Consultoria da edição brasileira, Danilo Marcondes; [tradução, Murcho D. et al.]- Rio de Janeiro: Jorge Zahar Ed.
4. Boyaciyani K; Camano L (2006). O perfil dos médicos denunciados que exercem ginecologia e obstetrícia no Estado de São Paulo. *Rev Assoc Med Bras*, 52(3): 144-7.
5. Brasil (1957). Lei No. 3.268, de 30 de setembro de 1957. Dispõe sobre os Conselhos de Medicina e dá outras providências. *Diário Oficial da União*. Brasília (DF); 26 de janeiro de 1988.
6. Brasil (1988). Conselho Federal de Medicina. Código de Ética Médica. Resolução CFM N° 1.246. *Diário Oficial da União*, Brasília (DF); 26 de janeiro de 1988.
7. Brasil (2001). Conselho Federal de Medicina. Código de Processo Ético-Profissional (2001). (Resolução CFM N° 1.617/01 publicado no *Diário Oficial da União*; 16 de maio de 2001.
8. Brennan TA, Leape LL, Laird NM, Herbert L, Localio AR, Lawthers AG, Newhouse JP, Weiler PC, Hiatt HH (1991). Incidence of adverse events and negligence in hospitalized patients. Results of Harvard Medical Practice Study I. *N England J Med*. 324(6): 377-376.
9. Cervantes J (1996). Iatrogenic injuries in surgery. *Acta Chirurgical Belgica*, 96(6); 242-4.
10. Charles SC (1993). The doctor-patient relationship and medical malpractice litigation. *Bulletin of the Menninger Clinic*, 57 (2): 195-207.
11. Clay SW, Conaster RR (2003). Characteristics of physicians disciplined by State Medical Board of Ohio. *J Am Osteopath Assoc*. 103: 8188.
12. Collinson D (2004). 50 grandes filósofos. São Paulo: Contexto.
13. Corrêa JA (2000). Da deontologia médica a Bioética. In: Petroianu A. *Ética, moral e deontologia médicas*. Rio de Janeiro: Ed. Guanabara Koogan.
14. Cunha AG (1986). *Dicionário etimológico Nova Fronteira da língua portuguesa*. Rio de Janeiro: Nova Fronteira.
15. D'Acampora AJ, Corrêa G (1996). Erro médico, uma abordagem. *Acta Cirúrgica Brasileira*, 11(1): 42-6.
16. D'Ávila RL (1998). O comportamento ético-profissional dos médicos de Santa Catarina: uma análise dos processos disciplinares no período de 1958 a 1996. Florianópolis: Mestrado [Dissertação] - Universidade Federal de Santa Catarina.
17. Dodd MM; Dodd MJ (1996). Anatomy of a medical malpractice lawsuit. *Maryland Med J*, 45(2): 108-115.
18. Durant G (1995). *A bioética. Natureza, princípios e objetivos*. São Paulo: Paulus.
19. E Silva FL, Segre M, Selli L (2007). In: Fabri dos Anjos M, Siqueira JE. *Bioética no Brasil: tendências e perspectivas*.
20. Falcão MSSA (1994). *A ética médica e suas infrações – Um estudo sobre os processos ético-profissionais do Estado do Rio de Janeiro*. Rio de Janeiro: Mestrado [Dissertação] - Fiocruz.
21. Fenn P, Hermans D, Dingwall R (1994). Estimating the cost of compensating victims of medical negligence. *British Med J*, 309: 389-391.
22. França GV, Gomes JCM (1999). Erro médico: um enfoque sobre sua origem e suas conseqüências. Montes Claros: Universidade de Montes Claros.
23. Gert, C (1970). *The moral rules: A new rational foundation for morality*. New York: Harper and Row.
24. Gomes JCM (1996). O atual ensino de ética para os profissionais de saúde e seus reflexos no cotidiano do povo brasileiro. *Revista Bioética*, 4: 53-64.
25. Gotschlich RB (1993). Las demandas y querellas por responsabilidad medica em La hora actual y sus mecanismos de regulacion. *Cuadernos Medico Sociales*, 34 (2-3): 15-28.
26. Habermas J (2002). *A inclusão do outro*. São Paulo: Loyola.
27. Jacobson PD (1989). Medical malpractice and the tort system. *JAMA*, 262 (23): 3320-3327.
28. Kant I (2003). *Crítica da razão prática*. São Paulo: Martins Claret.
29. Kfoury Neto M (2007). *Responsabilidade civil do médico*, 6ª ed. São Paulo: Ed. Revista de Tribunais.
30. Khalig AA, Dimassi H, Huang CY, Marinel L, S Mego RA (2005). Disciplinary action against physicians: Who is likely to GO disciplined? *N Engl J Med*. 1118: 773-7.
31. Leape LL, Brennan TA, Laird N, Lawthers AG, Localio AR, Barnes BA, Hebert L, Newhouse JP, Weiler PC, Hiatt HH (1991). The nature of adverse events and negligence in hospitalized patients. Results of Harvard Medical Practice Study II. *N Engl J Med*. 324(6): 377-84.
32. Macer D (2009). Editorial: Nature of bioethics. *Eubios Journal of Asian and International Bioethics*. 19: 1.
33. Machado MH (1996). Perfil dos médicos no Brasil: análise preliminar. Rio de Janeiro: FIOCRUZ / CFM-MS / PNUD.
34. Maia DB (1999). Erro médico no Brasil: análise de processos ético-profissionais julgados pelo Conselho Federal de Medicina no período de 1988 a 1998 (monografia). São Luís, MA: Universidade Federal do Maranhão.
35. Marques Filho J, Hossne WS (2008). Análise bioética dos processos de cassação do exercício profissional no Estado de São Paulo. *Rev Assoc Med Bras*; 54(3): 214-9.
36. Minayo MCS (2004). *O desafio do conhecimento: pesquisa qualitativa em saúde*. 8. ed. São Paulo: Hucitec.
37. Montoya D, Rosmanich A, López J (1993). Aspectos clinicos y evaluacion medico-legal em demandas por responsabilidad medica em obstetrícia y ginecologia. *Revista Chilena de Obstetrícia y Ginecologia*, 55 (6): 403-412.
38. Morrison J, Wilckersham P (1998). Physician disciplined by Estate Medical Board. *JAMA*. 279: 189-93.
39. Moura Fé IA (2000). Prefácio. In: França GV. *Comentários ao código de Ética Médica*. Rio de Janeiro: Ed. Guanabara Koogan.
40. Mbugua K (2009). Is there an African Bioethics? *Eubios Journal of Asian and International Bioethics*, 19: 2-5.
41. Neves NMBC. Códigos de conduta: abordagem histórica da sistematização do pensar ético. *Rev Bioética* 2008;16:109-115.
42. Pellegrino ED (1978). Ethics and the moment of clinical truth. *JAMA*, 239(10): 960-961.
43. Penchansky R, Macnee C (1994). Initiation of malpractice suits: A conceptualization and test. *Medical Care*, 32: 813-831.
44. Sanguinetti FA (1998). Responsabilidade ética y jurídica do cirujano. *Revista Argentina de Cirurgia*, Número Extraordinario, 5-53.
45. Seugling FR, Perche ME, Mendes RT (2007). Distribuição dos processos disciplinares pelo Cremesp – Conselho Regional de Medicina do Estado de São Paulo e seus resultados nas diversas especialidades. *BIOETHIKOS – Centro Universitário São Camilo*. 1(2): 56-62.
46. Siqueira JE, Porto D, Fortes PAC (2007). Linhas temáticas da bioética no Brasil. In: Fabri dos Anjos M, Siqueira JE. *Bioética no Brasil: tendências e perspectivas*.
47. Siqueira JE (2008). A bioética e a revisão dos códigos de conduta moral dos médicos no Brasil. *Rev Bioética*. 16: 85-95.
48. Schramm FR (2003). A bioética da proteção em Saúde Pública. In: Fortes PAC, Zoboli ELCP. (Orgs.). *Bioética e Saúde Pública*. São Paulo: Loyola.

49. Shneider S (2004). A abordagem territorial do desenvolvimento rural e suas articulações externas. *Sociologias*, Porto Alegre, 6(11): 88-125.
50. Taragin MI, Sonnenberg FA, Karns ME, Trout R, Shapiro S, Carson JL (1994). Does physician performance explain interspecialty differences in malpractice claim rates? *Med Care Jul*, 32(7): 661-7.
51. Undelsmann A (2002). Responsabilidade civil, penal e ética dos médicos. *Rev Assoc Med Bras*. 48: 172-82.
52. Vieira TR, Diniz NM, Silva J (2007). Bioética e construção da normatividade. In: Fabri dos Anjos M, Siqueira JE. *Bioética no Brasil: tendências e perspectivas*.
53. Zambieri JrS (1995). Erro médico: semiologia e implicações legais. *J Bras Med*. 69: 116-20.

## Corpses and Philosophy

- Masayuki Yoshida, BA MA PhD<sup>1</sup>

Independent scholar and Tokyo-based academic journalist, Japan  
Email: ysd\_m@yahoo.co.jp

### Discussion on Corpses

Philosophy explores the human mind. In general, therefore, it shows a passive attitude toward discussion on the corpse which lacks a mind. Philosophical debate on the body assumes the dualism between “body and mind”. Even criticism of this dichotomy assumes that there is a relation between body and mind. However, discussion on the corpse has to bear themes that have little to do with mind, whilst it often deals with the problems of how one considers a corpse as an object of observation by one’s mind, and how one has a relation with the object. Thus the exploration of how one can understand a corpse as a philosophical object will arrive at the fundamental question: “is ontology of corpse *per se* possible?”

In Western discourse there are two persistent debate lines on the body. One line rose from Descartes’s most celebrated dictum *cogito ergo sum* which is the starting point of his system of knowledge. The ontological modes of body and the relation of body and mind were considered from a point of view of a rigid body/mind dichotomy. This line leads to a French line of philosophers such as Bergson (1911) and Merleau-Ponty (1963) who basically argued that there is an issue regarding body and mind founded on the basis of epistemology. Since the key terms of this line are “mind”, “rationality” and “their relation with body”, there are seldom any suggestions that this French line understands the mode of existence of a dead body which has lost its “mind” and “rationality”.

Another line rose from John Locke’s “self-ownership” thesis (1988 [1690]). On the conviction that labour *per se* is the labourer’s property, Locke sought to justify the grounds for his argument on the premise that produce should be ascribed to its producer. Moreover, on a further conviction that since a human is both an embodiment of potential labour and the owner of its body, Locke sought to justify the grounds for the claim that labour is the owner of the body’s property. The *self-ownership* thesis presents self-ownership of a body as an axiomatic basis of property rights—a natural right. The thesis has been developed by C. B. Macpherson (1962), John Rawls (1973), Robert Nozick (1974) and G. A. Cohen (1981). Self-ownership is a right by which one can exclusively control one’s body and abilities. Strictly speaking, the subject of this ownership is one’s mind, i.e., self, that is supposed to exist independently from one’s body. Said in that way, one’s corpse, i.e., a posthumous mode of body, is no more than an existence separated from one’s mind in terms of time. It may

follow therefore that there are almost no suggestions that the discussion of this line gives for understanding the mode of a corpse.

Then, is philosophy irrelevant to a corpse? Can philosophy grasp it or how it can do so? The two philosophical lines attempt to understand a body from the perspective of its relation with the self—the subject of the body. However such an understanding must be frustrated by death. To reiterate, it is so because the mind of the subject becomes extinct by death and the dead body remains separated from the mind of the subject. Philosophical debate on a transformed corpse may be no longer interesting. As Turner addresses, “[t]he human body is subject to processes of birth, decay and death which result from its placement in the natural world, but these processes are also “meaningful” events located in a world of cultural beliefs, symbols and practices” (1984, 58). In the similar way we can recognise a corpse as a meaningful event by cultural religious beliefs, symbols, burials and ritual practices based on the social characteristics that survive death. In that sense the dead body is always socially formed and located. What and how it is to be a corpse, i.e., its meanings, functions and existence, is defined and formed by the medium of socio-cultural values.

Nevertheless if, recognising the separation between the dead body and its ante-mortem subject, we attempt to understand the association between one and one’s dead body, the debate on the corpse would be philosophically possible and feasible. This paper concentrates on answering the question “is my dead body my property?”

### Five Theses

Starting from the presupposition that my body is mine is not self-evident. The debate on self-ownership has been traditionally and historically developed by the at least five camps arguing differing perspectives on the debate about “who owns my body?”: (1) *self-ownership* thesis, (2) *economic efficiency* thesis, (3) *human dignity* thesis, (4) *limited ownership* thesis and (5) *person* thesis.

#### (1) Self-ownership thesis

This thesis argues that self-ownership can be justified as natural right (Locke 1988 [1690], Part 6). A right of self-ownership is based on apparent facts. In general the concept of self-ownership refers to the rights of each person to control his/her own thoughts, talents, capacities, actions and body (Thomas 1988). The concept here refers, in narrow sense, to a natural right as an exclusive power which everyone has over his or her self (and labour) even in a state of nature, prior to the creation of the nation (Morimira 1995). In plain speech the exclusive power would be “because my life is mine, I am the only one entitled to determine its course”. The use of the possessive “my” in these contexts clearly connotes more than a mere phenomenological relation (as in “my” mother or “my” fears); the “my” in “my” life is strongly proprietorial, it indicates what I “own” and what therefore I have a right to control (see Jones 1994).

Robert Nozick (1974) presents a more radical view in which he re-establishes Locke’s thesis (1988 [1690]) by incorporating the criticism of John Rawls’s theory (1973) on distributive justice. Nozick’s view is mainly based on thorough liberalism. However, there are several criticisms of the Lockean thesis of self-ownership, Munzer (1990, Chapter 3) criticises on the basis that here the substance of self-governing named self-ownership refers to a moral right but not to a proprietorial right.

The claim that a living body is an object for a moral right may lead to another applied claim that its continuity, i.e., a dead body, can be an object for a moral right. Human bodies are not regarded as a proprietorial thing as for instance a chair or a desk is. They are not an object for commercial dealings. As, with some exceptions such as hair and bodily fluids (e.g.,



blood and semen), we fail to buy or sell inner organs, or enter into a slavery contract, or sell human life on the grounds of self-ownership. We fail to regard a corpse as an object for commercial dealings. The term "fail" here refers not to being factually impossible but to being morally and legally avoidable or prohibitable.

Yet, aside from commercial dealings, it is socially acceptable during the course of one's life to donate certain parts of our bodies. Additionally, a person may donate parts of their corpse or their entire corpse after their death. However, even in these cases, human tissue is not considered a pecuniary object but rather an object for which no charge is made, or should be made, for any surplus parts; when given away, they are given with an altruistic attitude. Thus the reason why person's life, liberty and body are distinct from property dealings is that they are intimately connected with the person's personality.

This criticism emphasises the argument that, since self-ownership, i.e., rights to self-ownership, is a moral right that can not be basically alienated or at least alienated for payment, it is totally different from proprietary rights. In this way it should be noted that philosophical debate can deal with a corpse as an object of a moral right.

## (2) Economic Efficiency thesis

The *economic efficiency* thesis (e.g., Posner 1981) connects utilitarian arguments to economic efficiency. Here one's body is functionally valued as an object for the proprietary right. That is to say, the property right in human tissue can be justified in virtue of its connection with social institutions such as economic markets. In the last two decades, this perspective rests on the practice, persuasiveness and demand of and for organs transplants and the interest in allocation of human organs. Here a corpse can be justified as property by the *economic efficiency* perspective and can be treated as well as other properties of inheritance are treated. Therefore, the argument based on this thesis has little interest in social characteristics and symbols that a corpse was inherited from its living body.

## (3) Human Dignity thesis

The third thesis advocates that a human body should not be thought of as property at all (e.g., see Gold 1996, Chapter 7). This rejects the theses of both self-ownership and economic efficiency. It opposes the beliefs discussed above that first, the human body can be wholly an object for property rights and second that the value of the human body should be grasped from an "economic efficiency" point of view. Ryan raises two principal objections: "[t]he first is a pure moral objection. It is simply disgusting, obnoxious or otherwise to be deplored if bodily parts are made the objects of commercial transactions," and "[t]he second objection is less a matter of an intuitive dislike of dealing in what ought not to be dealt in than distaste for the injustice of the bargains which are struck." (Ryan 1987, 111-2). Why is it that regarding a human body as an object of property is to mar human dignity? One prevailing conviction that underlines most human rights is that all human beings have intrinsic value precisely as human individuals. This value bears on, as mentioned previously, the two kinds of human dignity. Since the vital ground for protecting the value is rights, rights are strongly linked to the concept of human dignity.

All human individuals have, in a variety of ways and modes, potential abilities for the free development of their character, rationality, will and emotions. If one is subject to coercive interference then one's attempt to fulfil one's human potential, one's human dignity, is violated, possibly even dehumanised by the actions of others. Therefore, if and when others use physical force against one to make one do something against one's will, then they are violating one's human rights by not treating one as a human individual. The

human dignity of a body would be the sum of rationality, will and emotions, based on an individual's religious beliefs, philosophy, ethical values and culture, which s/he has as an individual human being. Therefore, coercive interference with one's beliefs results in a violation of human dignity. The *human dignity* thesis is a concern relating not only to an individual but to the community.

Our bodies and body parts are loaded with cultural symbolism (Synnott 1993, 1). The norms that guide the disposition of body tissue reflect community ideals and social priorities (Nelkin and Andrews 1998, 36). Therefore, to force those who believe in certain cultural symbols or interests to do something against their beliefs is to infringe their human dignity. Explained in this way, a corpse, namely a post-mortem continuous entity of a living body, can be considered as an entity which has dignity. That is to say, the *human dignity* thesis is opposed to regarding the human corpse as property in that to do so results in violating the dignity of the dead, the dignity which is regarded as an intrinsic value.

The *human dignity* thesis does not necessarily deny the *self-ownership* thesis. Once the owner has given consent, his/her property such as blood and hair can be removed and disposed of by others. Since the thesis links with the concept of community, it is necessarily influenced by communal interests. In order to resolve issues of human freedom and well-being which are linked with rights in society, the *human dignity* thesis often compromises the theses of *self-ownership* and *economic efficiency* for the benefit of medical development, for example, which is supposed to result in improving human welfare. The *human dignity* thesis underestimates the volume of organ donation for transplantation based upon market policy in contrast to that based upon the foundation of altruism. The reason for this under-estimation is that such donations, especially in the case of donors who respect cultural and religious values, frequently meet the expectations instantiated by these values and thus consented to them, rather than that altruism is universally more valuable than economic efficiency.

## (4) Limited Ownership thesis

The *limited ownership* thesis is a compromise position in which it is argued that insofar as one takes an overall view, people do not own, but have some limited property rights to their bodies (Munzer 1990, 45). Munzer (ibid., 49) subdivides property rights into two categories: a strong property right and a weak property right. The former involves a choice to transfer for value (recompense, payment, reward); the latter involves only a choice to transfer gratuitously. However, substantively whether property rights are strong or weak is a matter of rhetoric. Irrespective of "strong or weak", once an object is categorised as a thing and is vested with the attributes of property rights, we have to categorise it as property.

Munzer suggests "provisionally, that persons do not own their bodies but that they do have limited property rights in them" (ibid., 41). This is because, whilst the thesis of self-ownership has a condition of "a natural state" and it argues that a person has an unlimited right to his/her own body, Munzer points out "too many incidents are lacking" (ibid., 43). Therefore, whilst persons say that they own their bodies, it must be right to argue: "[r]estrictions on transfer and the absence of a liberty to consume or destroy, for example, indicate that persons do not own their bodies in the way that they own automobiles or desks" (ibid.). However, a question arises here as to whether the conclusion that persons have limited property rights to their bodies is correct. If we apply this thesis to a corpse, we would argue that one has limited property to one's dead body. Can it be justified?

## (5) Person thesis

Thus we arrive at the fifth thesis—the *person* thesis. This asserts that property can be connected to personhood,

exactly social characteristics. Ryan (1987) lucidly explains the position as follows:

"[t]he individual must be a member of a moral community which both recognises the sanctity of the individual and sustains a view of the good life which will give meaning to the individual's existence. What mankind values is not merely happiness but the happiness which comes from a consciousness of having done one's duty, and having been rewarded according to one's merits. As many writers have observed, it is not unhappiness which maddens us but injustice; by the same token, it is not mere pleasure which gratifies us but what one might call 'deserved well-being' ... [This perspective] does not, however, see individual rights as 'trumps'; we have rights as members of a community, and our rights cannot 'trump' the highest good of that community. It follows that property rights must be assessed by way of their contribution to a society in which personality is most adequately expressed. Durkheim, who thought a conception of this kind was embedded in modern consciousness and ought therefore to be expressed in contemporary institutions, insisted that a merely utilitarian conception of something close to 'sanctity' clings about them" (ibid., 70-71).

The long quotation above suggests three things. First, it urges a discussion of the question "what does 'sanctity' mean here?" "Sanctity" here is another name for the inviolability of an individual right of property. This "inviolability" can be ascribed to the impossibility of substituting the property. On the other hand it would be very likely that all we grasp from the concept of property is the relationship between a person's body and him/herself, as a subject of interest and a power, who is able to exclusively use the property. However, the "sanctity" stems from rights of character. This is because we assert that even gravestones have the potential to possess social character.

Ooba (1991) explains a different perspective. He argues, for example, that the preciousness of character should be released from the way of thought that regards preciousness as the inviolability of rights of subjects who own their life. Rather the focus of discussion should be on the impossible of withdrawal of the mutual actions of harming and being harmed. Based on such a genealogical perspective as Nietzsche's and Foucault's, Kawamoto (1992) notices the etymological associations amongst own, owe and ought.

Second, it is suggested that this retains the dignity and protects the inviolability of rights of the individual, whilst at the same time ensuring there would be body parts or whatever available. Any society institutions associated with rights regarding a body have to reflect the desires of persons, whilst at the same time upholding and promoting social interests. This is a discussion on "how we consider the 'inviolability' of the right of character in a body" rather than a discussion on "how to discover the value of the property right of a body".

Third, even if "[w]hat mankind values is not merely happiness but the happiness which comes from a consciousness of having done one's duty, and having been rewarded according to one's merits", the property right determined in the process of the consciousness is strongly associated with the right-holder's personality. When we see individual rights as those of character rather than "trumps", we recognise that such a consideration is already incorporated into English and Japanese law.

Thus the sanctity of an individual's dead body can be ascribed to the characteristics that the individual held, and the characteristics can be evaluated by people's judgements, social attachments or desires. It follows that even after its subject is extinct a body still represents a part of the ante-mortem subject's characteristics amongst relations with the living.

## Conclusions

The criticism of Locke's thesis of self-ownership was that self-ownership is not a property right but a right of character. The view based on a right of character does not consider as property, rights over one's body which one can hold, use and exclude from other's interference. It considers them as a kind of character. If we have doubts, despite whether property rights are strong or weak, about both the position in which the proprietary rights in a body can be claimed, and the view of economic efficiency based upon Utilitarianism, then we have to seek a third way. This leads us to the conclusion that a view derived from the concept of morality based on character can provide significance to an individual both as a subject of morality and as a member of the moral community. In the inherited form from a living body even a corpse has social characteristics and can be also a symbol.

## References

- Bergson, H. (1911), *Matter and Memory*. London: Swan and Sonnenschein.
- Cohen, G. A. (1986), "Self-Ownership, World-Ownership, and Equality", in F. Lucash (ed.), *Justice and Equality: Here and Now*. Ithaca and London: Cornell University Press.
- Gold, E. R. (1996), *Body Parts*. Washington, D. C.: Georgetown University Press.
- Jones, P. (1994), *Rights*. London: Macmillan.
- Kawamoto, T. (1992), "Jiko-shoyu-ken to entaitorumento" (Self-ownership and Entitlement), in Nihon houtetsu gakkai, ed., *Gendai shoyu ron* (A Modern Perspective of Property). Tokyo: Yuhikaku.
- Locke, J. (1988[1690]), *The Treatises of Government*. Edited by Peter Laslett. Cambridge: Cambridge University Press.
- Macpherson, C. B. (1962), *The political theory of possessive individualism: Hobbes to Locke*. London: Oxford University Press.
- Merleau-Ponty, M. (1963), *Phenomenology of Perception*. Translated by C. Smith. London: Routledge & Kegan Paul.
- Morimura, S. (1995), *Zaisanken no riron* (A Theory of Property). Tokyo: Koubundo.
- Munzer, S. R. (1990), *A Theory of Property*. New York: Cambridge University Press.
- Nelkin, D. and Andrews, L. (1998), "Homo Economics: Commercialization of Body Tissue in the Age of Biotechnology", *Hastings Center Report*, 28 (5): 30-39.
- Norzick, R. (1974), *Anarchy, State, and Utopia*. New York: Basic Books.
- Ooba, K. (1991), *Kenryoku towa donna chikara ka* (What is Power?). Tokyo: Keisoshobo.
- Rawls, J. (1973), *A Theory of Justice*. Oxford: Oxford University Press.
- Ryan, A. (1987), *Property*. Milton Keynes: Open University Press.
- Synnott, A. (1993), *The Body Social*. London: Routledge.
- Thomas, D. A. L. (1988), *In Defence of Liberalism*. Oxford: Basil Blackwell.

# Ethical Perspectives: An Integral Part of Biotechnology Teaching in the Developing Nations

- Chandralekha Duttgupta, Ph.D.

Department of Biotechnology, Institute of Technology & Marine Engineering, PO Amira, 24 Parganas [S], West Bengal, India; Department of Obs. Gyn & Women's Health, Albert Einstein College of Medicine, Bronx, New York, USA. Email: [cduttgupta1@yahoo.com](mailto:cduttgupta1@yahoo.com) (Corresponding Author)

- Subhajyoti De<sup>3</sup>

MRC Laboratory of Molecular Biology. Cambridge UK; King's College. University of Cambridge. Cambridge. UK; Email: [sde@mrc-lmb.cam.ac.uk](mailto:sde@mrc-lmb.cam.ac.uk)

Part of this article has been presented at the 13<sup>th</sup> International Biotechnology Symposium and Exhibition, Dalian, China, 2008.

## Introduction

Biotechnology has undoubtedly come forward to human-benefit. Scientists have dedicated their lives towards the betterment of humankind. The advances in biology, biotechnology and medical technology have produced life saving drugs; unearthed truths about human ancestry; susceptibility to diverse diseases; sown the seeds of hope for a healthy and prosperous future.

Unfortunately, some of these developments also encountered far-reaching consequences, such as the case of DES (diethylstilbestrol, a synthetic estrogen). This once 'miracle drug' that prevented many miscarriages turned out to be a nightmare for many mothers and the society. Teenager female offspring of several DES-mothers developed vaginal clear cell carcinoma, a rare type of cancer generally occurs in the elderly people [Kurman 1979]. A well intended medicine became an issue of potential 'mass law-suit' for the pharmaceutical company in the US that marketed the drug.

Ultrasonography (USG) brought with it the euphoria that a woman and her husband could learn in advance the sex and health of their baby prenatal, and probably enthusiastically decide the name of their baby-girl in advance after an USG scan. Unfortunately, in reality today one opens an Indian newspaper in this 21<sup>st</sup> century only to find the news of abortion of a baby girl; and it too grabs only a minor column in inside pages only to be forgotten soon. The very same scientific innovation has led to two completely different outcomes in two parts of the world. While the side effects of DES was unintentional and unfortunate, the misuse of USG in India being clearly immoral, unethical and sadly, practiced even today.

We believe that every sensible and responsible person would like to prevent or at least content the undesirable fallouts of advances in biotechnology. But how can one effectively do it? One way to do is by empowering the youth with proper understanding of science and its implications-ethical, social and legal consequences of scientific innovations, inventions and interventions. With an ethical basis of scientific education, we perhaps can prevent repetition of many such dreadful events. One of us has been working on these issues for last several years and here we are bringing the issues of ethics of science, especially, 'Bioethics' in *Biotechnology*. It remains a topic of serious consideration how effectively we can deliver these topics to our students, particularly in the developing countries, where

many social taboos and strictures that mask or deter the perspectives of bioethical issues [Duttgupta 2008].

What is special about biotechnology that makes us to worry about it? The history of humankind has not witnessed this dimension of scientific and technological advancement within such a short period of time. The basic goal of most scientific research is the welfare and betterment of humankind. Yet, within any **new pursuit** the questions of ethical implications or even far-reaching consequences remain relevant. In a paradoxical way it requires, on the one hand, **freedom** (for the scientists) **to pursue and deliver the quality products** (that is scientific results/truth/facts) and on the other hand, **regulation** (Legislative / societal) **to ensure human rights, dignity, equality and equity** [Duttgupta 2004].

The possibility of the vast applications of recombinant DNA technology such as in human cloning, genetic manipulation of drugs and food or genetic testing, and others keeps reminding us Mary Shelley's brainchild Victor Frankenstein. This archetypal story continues to embody and encapsulate human fears. How can one be sure that an apparently innocuous food/drug would not cause havoc years later? What will be 'ethical' in biotechnology? How can a balance be struck? And who shall decide where to draw the line [Duttgupta 2004]?

In pursuing these let us first make a brief overview of the achievements in biotechnology in the recent times and then, put forward the ethical issues that are intricately imbued in most biotechnological developments and progresses. Finally, let us bring up the social/other considerations that we think could influence the learning / application of bioethical issues.

## Advancements in Biotechnology

### *The birth of recombinant DNA- technology (1960-70)*

It all began with Paul Berg and his associates; Stanley Cohen & Annie Chang; and Herbert Boyer & Robert Helling. They cut segments of DNA from two different organisms, combined and inserted them into *E coli*. In *E coli*, the new plasmid got replicated. The newly replicated plasmids contained sequences from the parental plasmids and manifested the information encoded in them [Jackson *et al* 1972, Cohen *et al* 1973]. A new chapter of biotechnology was started.

### *Patenting Life (1970-80)*

One of the first famous applications of genetic engineering was a modified bacterium that had potential to digest oil (e.g., oil-spills in oceans). This bioengineered organism was deemed patentable in 1980. It made history, since this was the very first case where a *living organism* being patented [Diamond v. Chakrabarty 1980].

### *Genetically Modified Crops or Transgenic Crops (1980-90)*

Biotechnology is an extremely powerful tool in agricultural development with great potential. In the last few years, genetically modified (GM) or transgenic crops have become routine practice in the developed and developing countries. It is anticipated that biotechnologically developed agriculture will be able to feed an increasing population of 8.0 billion by the year 2020 and would be able to bring solution to the global food crisis [Food and Agriculture Organization of the United Nations 1999].

### *Genetics in the 21<sup>st</sup> Century: Era of the Genes (1970s – 2000 & beyond)*

#### **A. Human Cloning for Medicine**

James D. Watson in 1971 wrote an article "Moving toward the Clonal Man: is this what we want?" in *The Atlantic Monthly*. He wrote and we quote "--- the idea that we might have a world populated by people whose genetic material was identical to that of previously existing people **can belong**

**to the domain of the novelist or moviemaker, not to that of pragmatic scientists** who must think only about things which can happen. ---" [Watson 1971]. This conceptual article predates even the birth of Louise Brown, the first *in vitro* fertilization (test tube) baby, born almost 30 years ago.

James Watson's vision of a "clonal man" got closer to reality when Ian Wilmut and his associates of the Roslin Institute, Scotland announced the birth of a cloned sheep (named Dolly) in 1997. Dolly was developed from the cells of an adult ewe using 'somatic cell-nuclear transfer'. It was widely debated whether the same technique could perhaps be utilized for 'human cloning' [Dolly the Sheep 1997].

## B. Gene Therapy

Gene therapy is defined as "intentional alteration of DNA in human chromosomes to *prevent or treat a disease*" [Anderson 2000]. It can be classified into several categories--

### a. somatic cell gene transfer, where,

- i) a foreign gene is inserted in any somatic cell for therapy.
- ii) **enhancement genetic engineering:** a method to *enhance* normal individual's characteristics by *inserting an extra copy of a gene* (e.g. to enhance physical features).
- iii) **eugenic genetic engineering:** to modify *complex human traits* (such as intelligence, personality etc).

**b) germ line gene transfer,** a foreign gene is inserted in the germ line. At present only somatic cell gene therapy is permissible.

## C. Genetic testing

This determines whether a person has a genetic disease or susceptibility and can be done in cases of a) carrier identification to detect in individuals having familial history of b) recessive genetic disorder (eg, sickle cell trait, cystic fibrosis etc); c) prenatal diagnosis for mental retardation or physical abnormality (eg, Down syndrome); d) newborn screening for congenital diseases, e.g, phenyl ketone urea (PKU); e) late onset disorders for adulthood diseases, such as cancer etc [www.ibl.gov/Education/ELSI/genetic-testing.html ...].

## D. Stem cell Research

Stem cells found in multi-cellular [organisms](#) are pluripotent i.e. they can [differentiated](#) into a diverse groups of specialized cell types such as muscles, nerves and others. This characteristic makes them important in their potential use in various [medical therapies](#)..

A number of adult stem cell therapies already exist, such as bone marrow transplants to treat leukemia [Gahrton & Björkstrand 2000]. There is a wider anticipation that in the future, cells artificially derived from stem cells will be able to treat a wider variety of diseases such as [cancer](#), [Parkinson's disease](#), [spinal cord injuries](#), [muscle](#) damage, and also a number of other impairments and conditions [Lindvall 2003 ; Goldman & Windrem 2006].

## E. Human Genome Project (HGP)

The Human Genome Project (HGP) started in 1990 with an ambitious plan of sequencing 3 billion base pairs of the human genome, identifying the genes and decoding the information encrypted there. On June 26, 2000, almost five years earlier than the anticipated completion date we watched the historic conference of held by President Bill Clinton and Prime Minister Tony Blair on the occasion of unraveling more than 90 percent of human genome.

In 1998 in a multidisciplinary meeting held in Cambridge, Massachusetts, on HGP, Eric Lander of Whitehead Institute of Biomedical Research presented his views on the significance of HGP. He compared the human gene map with that of Mendeleev's *Periodic Table of Elements*. His analogy has been that Mendeleev laid the foundations for much of the 19<sup>th</sup>-and 20<sup>th</sup>-century chemistry and the chemical industry

[The Human Genome Project 1998]. This *gene periodic table* constituted by 100,000 genes will help the scientists understand the diversity.

## Flourishing Biotech Industry (2000 & beyond)

Biotechnology is considered as a "sunrise industry" with varieties of output. For example, in agriculture - there is wide anticipation that genetically modified crop will greatly reduce hunger and poverty. India's green revolution in last 50 years has turned us into a net exporter. In other avenues India is venturing into new areas, for example in the health sector, new revolutionary treatments (such as Gene Therapy, Genetic Testing etc); Industrial Biotech --- that produce chemicals, enzymes, hormones, production of Penicillin, Vaccines, Insulin (*first rDNA product of the world by Eli Lilly and Company*) human growth hormone, Monoclonal antibodies to treat cancer/asthma, and many more.

Recently we have observed a boom in biotech industry in India, and also around the world. India has a huge potential to become tomorrow's leader in the field due to its large repertoire of biodiversity, inexpensive skilled human resources, large emerging market economy and already existing peripheral support systems. Under current growth rate, the total biotech market in India has a potential to generate 5 billion dollars by 2010.

## Questions and Dilemmas

Many of these above mentioned advancements in biotechnology have not only brought a lot of promises but also raised a number of questions and dilemma. Let us take the issue of cloning: the endeavors leading to the birth of Dolly, the first cloned sheep were certainly different from all previous attempts to create *identical* babies (since Dolly contained the genetic materials of one parent and was a *delayed genetic twin* of a *single adult* sheep). This particular cloning technique is an extension of 'cloning research' conducted over the past forty years or so. There were few ethical, social or legal debates on cloning through nuclear transplantation before **Dolly's birth**, since the scientific consensus was that such procedure might not be biologically viable. The birth of Dolly raised the apprehension that the same technique perhaps could be used for human cloning.

*For last couple of decades, the "ethics of human cloning" has become an important issue for bioethics debates. There have been many potential benefits such as possibility of renewed activities of damaged/ genetically altered cells (of important nature) by replacing them with clonal cells; creation of human beings with identical genetic make up who can participate in organ transplant (with little or no rejection); sterile couples or distressed parents will be able to enjoy parenthood with the genetic make up of the child, derived from at least of one parent; and many more. However, there were a few potential complications like loss of genetic variation; loss of individuality; cloned individuals might have psychological problems with impacts on family and society and they might be treated as second class citizens; abuse/misuse of the technology; and others. Potential complications eventually outweighed the good and beneficial prospects of cloning. The 'cloning' issue became even more complex with the premature death of Dolly. Scientists had an added responsibility to determine whether this premature death was in any way connected with the cloning technology. Wilmut himself hopes that the technique does not get reproduced in Human Cloning and only be used in human benefit such as in need of transplantations or for replacing genetic defects etc [www.newhum.com/for\_students/link\_o\_mat/wilmut.html ...].*

The ethical issues of somatic cell gene therapy are similar to any other new and powerful treatment. Its benefits need to

be weighed carefully against its risks. The benefits include its capacity to cure/prevent diseases for which inadequate or no therapy exist. Germ line gene therapy, genetic enhancement and eugenic engineering are far more complex and therefore, needed to be appraised even more carefully. Procedures that will be applied have to be reliable, reproducible and safe beyond doubt.

There had been a lot of soul-searching at the second Asilomar meeting particularly with gene-therapy [Barinaga M. 2000]. Gene-therapy has been on a hot seat since the death of Jesse Gelsinger, an 18-year old subject on a gene therapy trial at the U Penn in 1999. Scientists in the field were aware that the adenovirus vector being used in the U Penn trial had the potential to cause severe immune reaction and yet "why didn't we stand up?" said Inder Verma. This sentiment was carried over by David Baltimore who said that it would be an absolute necessity for the gene-therapists to slow down and re-examine certain standards questions. Above all, these experimentations must have *societal* approval.

Genetic information for individual identification is one of the most hotly debated issues today. Genetic profiles of one or more genetic markers (DNA fingerprints) are compiled and are currently in use for legal cases involving paternity or in criminal investigations. These can also be used to identify the victims of accidents. However, the thought of using genetic testing results for employer records or for insurance sent shock waves and has become a hot topic of discussion in many countries. A critical and analytical position must be taken in obtaining/handling such data. Privacy (of the individual), informed consent (from the individual) and confidentiality (by the agencies) must be of the highest order. In the multidisciplinary meeting held in Cambridge, Massachusetts, on HGP LeRoy Walters (Kennedy Institute of Ethics, Georgetown University) emphasized certain ethical values of life in the process-- "We can applaud the war on disease that genetic research is waging. It will be a great day when a child is definitely cured of cystic fibrosis or when a particular family line is liberated from the burden of fragile X syndrome. But we will be humane warriors only if, in the midst of the battle, we also show respect for those who courageously cope with disability and for those who cannot yet be cured" [The Human Genome Project 1998].

In the past years the transgenic plants/crops has become routine practice, changing the plant-breeding pattern completely. This certainly raised a number of questions. Transgenic crops embrace many of the major issues in bioethics, namely, free will, the concepts of right & wrong and justice. No doubt it may bring solution to the world hunger; but does it pose unacceptable risks to the human health or environment? Dependence on transgenic crops may lead to loss of local varieties, which may have a long-term impact on agriculture, and in broad sense, on our environment. Moreover, many of the present days' transgenic crop-research is conducted by chemical companies and is directed towards chemically dependent crop variety and value-added products rather than staples. This may potentially pose threats for human health. Modified crops through incorporation of genes for tolerance to biotic and abiotic stresses may represent on the one hand, an improvement in the crop production. On the other hand, they may be just as unfriendly to the environment as the others may. With genetically engineered crops there is also a subtle conflict generated between human requirements and respect for nature (environment). And the debate continues.

#### Importance of developing bioethics guidelines

How biotechnology and human benefit can be reconciled? To systematically address these issues, a new area has been developed in the last few years – this is Bioethics. "Ethics" may be defined as the guide to "moral principle/philosophy"

which makes to distinguish between 'right' and 'wrong'. 'Ethics rest upon moral integrity' --- bioethics rest upon the scientists' integrity. Darryl Macer of the Eubios Ethics Institute said that 'learning Bioethics is part of social maturity' [Macer 2006]. According to Minakshi Bhardwaj of Cardiff Univ, "It Does not denote any particular field of human inquiry but works as an **intersection** between **ethics** and life sciences, emerging as a new field --- connecting medicine, biology and environmental sciences with social sciences like philosophy, religion, literature, law and public policies, etc..." [Bhardwaj 2006].

How Bioethics is involved in biotechnology? Let us take the situation of Agricultural Biotechnology. The UN- Food & Agricultural Organization (FAO) discussed the ethical issues of Agricultural Biotechnology at their Rome meeting in 1998 at length. Accordingly, "Biotechnology is more than just a scientific issue. It is capable of engendering disagreement and controversy, and highlighting moral and ethical concerns, which are difficult to resolve" [FAO 1999]. A major concern is that Biotechnology 'interferes with the working of nature and creation', and that it might involve risk-taking for commercial profit. Concerns are that transgenic crops which contain ethically sensitive genes, (such as antibiotic marker genes and promoter sequences derived from viruses) will adversely affect human health [Robinson 1999; Hubbell & Welsh 1998; Levidow & Carr 1997]. The development and deployment of transgenic crops in the developed nations rest on several issues including the balance between risks and benefits. *All concerns must be balanced*, respecting ethical aspects but reflecting the actual and potential possibilities of increasing food supplies to alleviate hunger. All these must have societal approval. The ultimate message is that cost-benefit effect is not a viable argument when it comes to the point of human health and life.

Interestingly, the same message has a different interpretation and perspective in the light of hunger and food shortage in the developing and under developed world. Is it ethical to ask someone to restrain themselves from taking "ethically sensitive genes"-containing food, when they have no other alternatives available? This perpetual question comes from our students in their bioethics class. There are several others which lead to the next obvious question "what guidelines are to be followed?"

Recently a global effort has been made to match the developments in biotechnology and to understand the ethical, social and legal implications of its achievements.

#### Bioethics and Asilomer conferences

The first systematic effort perhaps started in the early 70's with the Asilomer Conference of 1975 [Berg 2004]. This Conference was the first International Congress on recombinant DNA molecules for the formulation of certain guidelines. This meeting was a landmark of social responsibility and self-governance by the scientists and therefore, a defining moment for science and society.

In the first Asilomar meeting the scientist-organizers did not directly address the ethical issues involving genetic alterations and remained focused on the safety issues to settle a set of guidelines, which would allow the scientists to perform work with recombinant DNA. Importantly, the scientists made the US Congress to realize that they were capable of governing themselves and no legislative restrictions were needed.

An "Asilomar Revisit" took place in February 2000 [Barinaga 2000]. The technology that seemed like 'science-fiction' in 1975 was now a commonplace. Public became more aware and suspicious of the scientific implications. The first Asilomar participants were purely academic. And according to David Baltimore in the 2<sup>nd</sup> Asilomar, "there are only few pure academics left in molecular biology...Most senior academic researchers have ties to biotech companies that would complicate any attempts of self-scrutiny".



A major point of discussion at the 2<sup>nd</sup> Asilomar was to re-examine the question 'when is it ethical to begin a trial on human subjects?'. Taken together, Asilomar conferences made a strong foundation for the development of Bioethics, and putting it at the forefront of biotechnological research and its applications. This takes us into the fundamental *Ethical Principles of Biomedical / (Biotechnological) Research*.

### Ethical Guidelines & the Growing voice for Bioethics

The concept of 'Ethics' in Biomedical / (Biotechnological) sciences emerges at the wake of Nuremberg trial. The importance of a body of ethical guidelines was first expounded. A ten-point guideline was established of which four general principles are accepted and practiced (Autonomy, Justice, Beneficence, Non-maleficence).

As the sensitivity to the importance of ethical oversight grew more acute, the other guide lines like: the Declaration of Helsinki formulated by the World Medical Association (first in 1964, followed by several revisions); International Ethical Guidelines for Research Involving Human Subjects by the Council of International Organizations for Medical Sciences (CIOMS) (in 1982, revised in 1992 and 1999); and Good Clinical Practices by World Health Organization (WHO) came into existence. Compliance with these guidelines helps to ensure that the dignity, rights and safety of humans are protected along with good and credible scientific results. India like every other Nation has its own sets of rules pertaining to biotechnological/ biomedical research (DBT 2002; ICMR 2000)

A major principle is 'respect for human dignity', which brings the "protection of confidentiality" and "informed consent". Protection of confidentiality must clearly indicate as to who shall have access to the personal data of the participants (both information and biological material). Also, for informed consent, the adequacy, completeness and understandability of the experimental protocol; potential benefits and harms (if anticipated) will have to be spelled out prior to enrolling any participant. However in the Indian situation the *low level of literacy, lack of awareness* of any scientific research, *fear of medical procedures* owing to a lack of previous exposure to them make them *weary about signing* any paper. This has been nicely pointed out by Partha Majumder in a meeting on the collection and use of samples for genetic research organized by NIH, USA brought out that the difficulties of obtaining *written informed consent* from the rural/tribal Indian participants [Majumder 2000]. He also suggested that an audio or a video taped record and document may be a useful approach. This is highly practical in the Indian / other developing nation's context.

One of the cornerstones of the ethics of Biomedical/Biotechnological research is the rule governing *when to start* experimental therapy. This rule is repeated in every code of ethics laid down by any Ethical Committee (EC). The role of EC is to review research for safeguarding the dignity, rights, safety and well-being of all *potential* research human subjects. The ethical evaluation of all biotechnological trials must rest upon a) a good understanding of the science behind the interventions; b) balance of risks and benefits; and c) revelation of all facts (both good and ill). Emphasis must be given that an impartial or unbiased assessment of the programs and the results generated therein should be an absolute requirement.

### Bioethics in curriculum

Let us now bring out the Bioethics teaching system in the developing countries, India in particular. In the developed nations Bioethics curriculum is well developed. The ethical guidelines are developed by experts, reviewed constantly and implemented properly. Therefore, educating students of Bioethical principles can be done systematically and effectively.

In the developing countries, developing guidelines, implementing them and educating young generation are not simple. There are various factors that may deter the perspectives of bioethical issues along with many social taboos and strictures.

The curricula in many Indian Universities (and Academic Institutes) are vaguely delineated and are usually clubbed with Biosafety and/or Intellectual Property Rights (IPR). Majority of them put stress on IPR-courses than the Bioethics content. One of us teaches Bioethics course to the Biotechnology Undergraduate (Engineering) students. It is a 3 and a half month-course. Basically this curriculum is divided into two equal segments, Bioethics & IPR. The Bioethics part (reasonably well delineated for undergraduate syllabus) contains an introduction to ethics and bioethics; roots of honours and integrity in science; conditions of research with human beings; the responsible conducts of biotechnological research; societal obligation of a biotechnologist. Application of Bioethics in Biotechnology & its ethical considerations: this include the ethical and social issues of environmental ethics, genetically modified foods; genetic engineering; biomedical sciences; genetic information – their use, misuse & abuse; patenting human genes – ethical and policy issues; ethics in cloning, genetic testing and screening, gene therapy and genetic modification; legal implication of somatic cell gene therapy & germ line gene therapy. All regulations on ethical principles in biotechnological practice: The Nuremberg code of ethics, declaration of Helsinki; the Belmont report, operational guidelines – WHO, guidelines of DBT/ICMR (India), informed consent and their respective guidelines (Revised WBUT Syllabus, 2006).

However, there is a lack of practical exposure or parity between the implementation standards with that in the developed nations. Therefore, this 'Bioethics' course often becomes only a "theoretical" subject and gets diluted when it comes to "Practice". There is also a tendency to look at the matter in a lighter perspective and undoubtedly the students take the subject matter less seriously.

Added to this, there is a sudden boom in the Biotech Industry in the developing countries like India. It is speculated that the total biotech industry in India has a potential to generate over 5 billion dollars by 2010. The prospect looks highly lucrative and easily achievable to the budding biotechnologists. Therefore, it remains a challenge to foresee the unprecedented developments, the promises and potential mis-uses. The outcomes and their broad socio-economic impacts on the developing societies and emerging markets can be different from that in the developed nations. Therefore the measures taken will also need to be different

The guiding lessons particularly on the ethical aspects that are imbued within most of the rapidly growing biotechnological progresses and how to rationally analyze and implement the results are perhaps understated or lacking. It is a great concern for many of us, particularly the academicians and makes us worried about the future. We are particularly concerned about the quality of the academic products that we produce namely the students. We believe that there is a need for additional emphasis on Bioethics teaching, particularly in Biotechnology. It has to be a joint responsibility of both Academia and Industry.

### Perspective

Despite many a limitations and challenges, we believe that the bioethics will be able to limit the misuses of the biotechnological advancements, and that we will be able to educate the younger generation about the ethical sides of it, helping them find the right direction. There has been a series of government and non-governmental initiatives to educate the young and grown-up population of the country, and the momentum is only beginning to take place. We are confident

that with an honest and pragmatic outlook and ethical understanding, the next generations will be able to take up the benefits of biotechnological advances and make the world a better place to live for tomorrow. Therefore, we conclude on a positive note quoting the remarks of former US President Mr. Bill Clinton, made at the AAAS conference "...see that science serves humanity, and not the other way around". Dr. Mildred Dresselhaus, the then President AAAS responded "this disquieting sentiment-that science, like Dr Frankenstein's monster is poised to wreak havoc on its creator has a currency today that should alarm us, it should spur us to action. It is vitally important that science and technology serve humanity. But this can occur only in an atmosphere of hope and trust rather than suspicion and fear" [Dresselhaus 1998].

## References

- Anderson WF. 2000. A new Front in the Battle against Disease. In the Human Germline, eds. Gregory B. Stock, John Campbell, Oxford Univ. Press, NY, pp 43-48.
- Barinaga M. 2000. Asilomar revisited: Lessons for today? *Science*, 287: 1584-1585.
- Berg P. 2004. Asilomar and Recombinant DNA. 1980 Nobel Laureate in Chemistry. [URL: [http://nobelprize.org/nobel\\_prizes/chemistry/articles/berg](http://nobelprize.org/nobel_prizes/chemistry/articles/berg), accessed August'08.]
- Bhardwaj M. 2006. Looking back, looking beyond: revisiting the ethics of genome generation. *Journal of Bioscience*. 31: 167-176. Cloning People. [URL: [http://www.newhum.com/for\\_students/link\\_o\\_mat/wilmut.html](http://www.newhum.com/for_students/link_o_mat/wilmut.html), accessed January'09]
- Cohen SN, Chang AC, Boyer HW, Helling RB. 1973. Construction of biologically functional bacterial plasmids in vitro. *Proceedings of the National Academy of Sciences, USA*, 70: 3240-3244.
- Diamond v. Chakrabarty, 447 U.S. 303 (1980). U.S. Supreme Court. [URL: <http://supreme.justia.com/us/447/303/case.html>, accessed on January '09]
- Dolly the Sheep. 1997. *Science Daily—Science News*. [URL: [http://www.sciencedaily.com/articles/d/dolly\\_the\\_sheep.htm](http://www.sciencedaily.com/articles/d/dolly_the_sheep.htm) accessed on January 09.]
- Dresselhaus MS. 1998. What Scientists can Do To Fight The Frankenstein Myth. *The Scientist*, 12: 7-10.
- Duttagupta C. 2004. Biotechnology: Ethical Aspects. In *Ethical, Legal and Social Aspects of Biotechnology*, AR Banerjee Ed., Humboldt Club [Max Mueller Bhavan], Kolkata, India Publisher. Pp 135-157.
- Duttagupta C. 2008. Ethical perspectives: An integral part of Biotechnology teaching. *Journal of Biotechnology*, 136/S: S769.
- Food and Agriculture Organization of the United Nations: Committee on Agriculture Biotechnology, January 1999. [URL: <http://www.fao.org/unfao/bodies/coag/coag15/x0074e.htm> accessed January'09]
- Gahrton G, Björkstrand B. 2000. *Progress in haematopoietic stem cell transplantation for multiple myeloma*. *Journal of Internal Medicine*, 248: 185-201.
- Goldman S, Windrem M. 2006. *Cell replacement therapy in neurological disease*. *Philosophical Transactions of the Royal Society London B Biological Sciences* 361: 1463-75.
- Hubbell BJ, Welsh R. 1998 Transgenic crops: engineering a more sustainable agriculture? *Agriculture and Human values* 15: 43-56.
- Jackson DA, Symons RH, Berg P. 1972. Biochemical Method for Inserting New Genetic Information into DNA of Simian Virus 40: Circular SV40 DNA Molecules Containing Lambda Phage Genes and the Galactose Operon of Escherichia coli. *Proceedings of the National Academy of Sciences, USA*; 69: 2904-2909.
- Kurman RJ. 1979. Abnormalities of the genital tract following stilbesterol exposure in utero. *Recent Results Cancer Research*, 66: 161-174.
- Levidow L, Carr S. 1997. How biotechnology regulation sets a risk/ethics boundary. *Agriculture and Human Values*, 14: 29-43.
- Lindvall O. 2003. *Stem cells for cell therapy in Parkinson's disease*. *Pharmacological Research* 47 (4): 279-87.
- Macer DRJ. 2006. Teachers resources and notes for a cross-cultural introduction to bioethics. Eubios Ethics Institute. Christchurch, N.Z
- Majumder PP. 2000. National Institute of General medical Sciences Report, September 25-26.
- Robinson J. 1999. Ethics and transgenic crops: a review. *Electronic Journal of Biotechnology*, 2
- The Human Genome Project: Science, Law and Cambridge Symposium: Social Change in the 21<sup>st</sup> Century. April 23-24, 1998, Cambridge, Massachusetts.
- Watson JD, 1971. Moving Toward the Clonal Man. Is this what we want? *The Atlantic Monthly*, [URL: <http://www.theatlantic.com/doc/197105/watson-clone> accessed September'08.]
- What is Genetic Testing? [URL: [www.lbl.gov/Education/ELSI/genetic-testing.html](http://www.lbl.gov/Education/ELSI/genetic-testing.html) accessed January'09]

## Rural-Urban Differentials of Contraceptives Use in Bangladesh

- Md. Mahfuzar Rahman  
Research Fellow, Department of Population Science & Human Resource Development  
University of Rajshahi, Rajshahi-6205, Bangladesh  
Email: rahmanru\_pops@yahoo.com (Correspondence address)

- Md. Shahidur Rahman Choudhary  
Assistant Professor, Department of Social Work  
University of Rajshahi, Rajshahi-6205, Bangladesh

- Syeda Afreena Mamun  
Associate Professor, Department of Social Work  
University of Rajshahi, Rajshahi-6205, Bangladesh

- Md. Abu Bakar Siddique  
Assistant Professor, Department of Social Work  
National University, Gazipur Dhaka, Bangladesh

### Abstract

Various types of methods for contraception are being used in Bangladesh. This study has been made to know the usage pattern of these methods among the ever-married women living both in rural and urban areas. Data were drawn from the Bangladesh Demographic and Health Survey (BDHS), 2004. The study was executed separately for rural and urban areas, excluding those women who are currently pregnant. The results show that the contraceptive prevalence rate (CPR) is still lower in rural areas (54.6%) than the urban areas (62.7%) of Bangladesh. Condoms are more popular among the urban respondents than the rural respondents. IUDs, male sterilizations and Norplant are the least commonly used methods both among the rural and urban respondents. About 10% of the respondents are using traditional methods. Finally, the paper provides some additional suggestive policy measures that the planners and implementers may take proper initiatives to increase CPR and the country may reach the target of MDGs by the year 2015.

**Key words and phrases:** Bangladesh demographic and health survey (BDHS), contraceptive prevalence rate (CPR), contraceptive methods and family planning (FP).

### 1. Introduction

By the year 1970, most countries had realized that rapid population growth has adverse effects on their efforts in socio-economic development. The majority of the Asian countries have adapted family planning (FP) programmes for this purpose. They have been expanding FP program by mobilizing their internal and external resources to an almost unpredicted extent. The financial resources for this program

have also been increased significantly. Like other countries, Bangladesh is also dealing with the population problem of alarming growth. The policy to reduce fertility rates has been repeatedly reaffirmed by the Government of Bangladesh since the liberation War in 1971. From mid-1972, the FP program received virtually unanimous and high-level political support. The First Five-Year Plan (1973-1978) of Bangladesh emphasized "the necessity of immediate adoption of drastic steps to slow down the population growth" and reiterated that "no civilized measure would be too drastic to keep the population of Bangladesh on the smaller side of 150 million for sheer ecological viability of the nation" (GOB, 1973). In 1976, the government declared the rapid growth of the population as the country's number one problem and adopted a broad-based, multi-sectoral FP program, introducing field level workers to make contraceptive available at the doorsteps of eligible couples along with an official population policy (GOB, 1994:9). All subsequent governments that have come into power in Bangladesh have identified population control as the top priority for government action. This political commitment is crucial in understanding the fertility decline in Bangladesh. Despite an early and relatively strong commitment on the part of the government to FP program, there has been only a modest success in increasing the level of contraceptive use. The contraceptive prevalence rate (CPR) was 53.9% in 2001. It has increased only 2.3% and reached to 56.02% in 2004 (BBS, 2006).

FP presents one of the few success stories of Bangladesh. However, in spite of this success, the development efforts have stumbled and the trap of poverty cycle can not be broken as each year there are more two million new faces being added to the existing population.

Efficient population of a country is a potential resource, if it is proportion with other resources and needs of that country. The population of Bangladesh has increased in an unplanned manner, which is disproportionate with its resources and development. Although Bangladesh has been cited as a success case in the developing world for popularizing its FP services during the last 20 decades, there is continuing a wide gap between the set targets and actual achievements of the FP program. Moreover, the development efforts have stumbled and the trap of poverty cycle can not be broken as each year there are more two million new faces being added to the existing population. In view of the importance of this matter, the main objective of this study is to investigate the behaviors of the respondents towards contraceptive use regarding urban-rural differentials in Bangladesh. It is expected that this investigation responsible for differential achievements would provide a basis to evaluate the effectiveness of the existing system and to make future policy decisions.

## 2. Data and Methodology

The data for the present study are taken from the 2004 Bangladesh Demographic and Health Survey (BDHS). This survey was conducted during the period 1 January to 25 May 2004, on behalf of the Government of Bangladesh by the National Institute of Population Research and Training (NIPORT), with funding from the USAID/Bangladesh. In this survey, a total of 10,500 households were selected and of these households, 11,440 women were identified as eligible for the individual interview (i.e. ever-married women and aged 10-49 years). But this study covered only 10,731 eligible women (of whom 7055 from rural and 3676 from urban areas) because currently pregnant women were excluded from the analysis of factors associated with use of family planning (Mittra and Associates, 2005).

## 3. Family Planning (FP) Program in Bangladesh

FP efforts were introduced in Bangladesh (then East Pakistan) in the early 1950s through the voluntary efforts of

social and medical workers. In this country, it evolved through a series of development phases that took place during the last 52 years. The FP Program in Bangladesh has undergone a number of transitional phases. The various transitional phases of FP program are as follows (Population Control Program in Bangladesh: Past, Present & Future, 1985; Mabud, 1992; HNPS, 2003):

**Phase I (1953-1959):** Small-scale contraceptive distribution services in urban areas as voluntary and semi-government efforts.

**Phase II (1960-1964):** Government sponsored clinic-based FP activities to provide FP services to 6.7 percent eligible couples.

**Phase III (1965-1970):** Launched as a priority program throughout the country that came to a standstill during the Liberation War in 1971.

**Phase IV (1972-1974):** Integrated health and FP program at the field level where oral pill was introduced as a method of contraception.

**Phase V (1975-1980):** Maternal and Child Health (MCH) based multi-sectoral program in rural Bangladesh.

**Phase VI (1980-1985):** Functionally integrated program that formed to be chaired by the chairman of Upazilla Parishad.

**Phase VII (1985-1990):** Intensive FP program was launched through Union Health & Family Welfare Centers (UH & FWC) and Satellite Clinic (CC) in remote & rural areas by involving community leaders and NGOs.

**Phase VIII (1990-1995):** Aimed at reduction of rapid growth of population by enhancing women's status through education and participation in social, economic and political life. It had been implemented through an interim plan during 1995-97.

**Phase IX (1998-2003):** Health and Population Sector Program (HPSP).

**Phase X (2003-2006):** Launched Health, Nutrition and Population Sector Program (HNPS) to meet the challenge according to the spirit of the International Conference on Population and Development (ICPD).

## 4. Available FP Options in Bangladesh

### Pill

The Pill is a very popular method of birth control that contains the hormone progesterin. It is taken daily by the woman. Pill suppresses ovulation, thicken the cervical mucus (preventing sperm penetration) change the endometrium (making implantation less likely), and reduce sperm transport in the upper genital tract (fallopian tubes).

### Condom

Condom, a latex sleeve made of rubber, is the most common mechanical contraceptive, which is usually used by males. It has the added advantage of drastically reducing the chances of either partner contracting a sexually transmitted disease (STD). Condoms are about 99 percent effective at preventing pregnancy, if it is used correctly.

### Injection

This method is extremely effective since all that's required of a woman is to return to her health care provider for a shot every three months. Injection of [Depo-Provera](#) prevents pregnancy by inhibiting ovulation, changing the cervical mucus to prevent sperm from reaching an egg, and by changing the uterine lining so that a fertilized egg will be unable to implant.

### Intra Uterine Device (IUD)

The intra-uterine device (IUD) is a small T-shaped flexible and copper device, which is inserted into the uterine cavity (womb) by a health care professional. It's designed to prevent sperm meeting the egg and stop an egg settling in the



womb. The IUD is an appropriate choice for those in long-term monogamous relationships who are not at high risk for sexually transmitted diseases or infections.

#### *Sterilization (Male and Female)*

There are operations to permanently prevent fertilization. This is only recommended for people who are sure they don't want to have any or more children. This doesn't prevent sexually transmitted infections (STIs).

#### *Withdrawal*

This is sometimes called Coitus Interruptus in which a man trying to withdraw his penis from the woman's vagina before he ejaculates. As a result, sperm do not enter the vagina and fertilization is prevented. Unfortunately, this method is extremely unreliable. This also doesn't prevent sexually transmitted infections (STIs).

#### *Norplant*

This method is only used by women and not a very popular method in Bangladesh.

#### *Periodic Abstinence*

Periodic abstinence is also known as fertility awareness, natural family planning, and the rhythm method. This approach entails not having sexual intercourse on the days of a woman's menstrual cycle when she could become pregnant.

#### *Abortions*

As a Muslim dominated society, abortion is only permitted in Bangladesh if the pregnancy is life threatening for the mothers.

### **5. Objectives of Ongoing Bangladesh's Population Policy**

Recently, the government adopted the Bangladesh Population Policy with the objectives to improve the status of FP, and maternal and child health, including reproductive health services and to improve the living standard of the people of Bangladesh through striking a desired balance between population and development in the context of the Millennium Development Goals (MDGs) and a Poverty Reduction Strategy Paper (PRSP). The objectives of the national population policy include the following:

- Reduce the total fertility rate (TFR) and increase the use of FP methods among eligible couples through raising awareness of FP;
- Attain a net reproduction rate equal to one by the year 2010 so as to stabilize population around 2060;
- Ensure adequate availability and access of reproductive health services, especially FP services to all including information, counseling and services for adolescents;
- Improve maternal health with emphasis on reduction of maternal mortality;
- Reduce reproductive tract and sexually transmitted infections (RTI/STIs) and prevent the spread of HIV/AIDS;
- Reduce infant and under-five mortality rates;
- Reduce maternal and child malnutrition;
- Promote and actively support programs for elimination of gender disparity in education, health and nutrition;
- Ensure early childhood development programs;
- Ensure and support gender equity and empower women;
- Develop the human resource capacity of planners, managers and service providers, including improved data collection, research and dissemination;
- Actively support measures to provide food and social security and shelter for the disadvantaged including the elderly, destitute, physically and mentally retarded persons;
- Actively support measures to regulate and reduce rural to urban migration;

- Support measures for environmental sustainability with emphasis on access to safe drinking water;
- Support poverty alleviating strategies and a conducive environment for improved quality of life;
- Ensure coordination among relevant Ministries in strengthening population and development linkages and making their respective mandates and implementation strategies more population focused.

### **6. Results and Discussion**

#### **6.1 Current Use of Contraception**

The term "current use" refers to the method that was being used by an individual client at the time of the survey. Thus, any respondent (or her spouse) using a family planning method at the time of survey was regarded as a current user.

Table 1 summarizes the pattern of used (currently) of contraceptive methods among the married women of aged 10-49. The results indicate that the contraceptive prevalence rate (CPR) is still lower in rural areas (about 8.3% lower) than the urban areas of Bangladesh. More than 22% of rural respondents said they never used any methods of contraception whereas this figure is about 14% for urban areas.

Table 2 represents the percentage of the respondents aged 10-49 according to the use (current) of any individual contraceptive methods in Bangladesh. The results show that the pill accounted for the highest use both for urban (26.2%) and rural (24.4%) areas, followed by the injections (9.6 and 9.5%), periodic abstinence (6.5 and 6.6%), female sterilizations (5.8 and 5.1%), and withdrawal (4.1 and 3.4%). In case of condom, it is more popular (about 5.2% more) among the urban respondents than the rural respondents. IUDs, male stabilizations and Norplant are the least commonly used methods both among the rural and urban respondents.

Table 3 reveals that the practices of modern method are only about 50% among the urban respondents and among the rural respondents; it is only less than 45%. It is interesting to note that the urban and rural respondents (more than one-fifth and one-sixth respectively of the total use) are relying on less efficient traditional and modern reversible methods. This finding deserves special attention by FP program managers.

#### **6.2 Future Intention Concerning Contraceptive Use**

In view of the fact that a large proportion of respondents (45.4% of rural and 37.3% of urban) are non-users of contraceptive methods, it is important to investigate whether they have any future intention to adopt family planning methods in order to limit their fertility. To determine their future intentions, respondents were asked whether they intended to use any method to avoid pregnancy at any time in the future, and if yes, which method they would prefer and the results are presented in Table 4.

In response, 43.88 % of the rural and 48.25 % of the urban non-user respondents said that they do not intend to use a FP method in the future, although their current non-use rates are 45.40 % and 37.30 % respectively. This indicates that the rural respondents have a higher potential demand for using contraception in the future. But it is not known whether this demand is for limiting their fertility at an older age when they will already have achieved their desired level of fertility, or whether it is to postpone or space the birth of a child. With regard to the future choice of individual methods, 23.87 % of urban and 25.16 % of rural non-user respondents replied that they would prefer oral pills as their contraceptive method (Table 4). The next choice would be an injectable contraceptive (8.18 and 10.42% respectively). However, condoms would be the least popular of the intended methods to be used. This reflects the fertility-limiting attitude associated with younger age both among the rural and urban women.



Table 1: Pattern of Used (Currently) of Contraceptive Methods among the Respondents

Pattern of use	Rural		Urban	
	No. of respondents	Percentage (%)	No. of respondents	Percentage (%)
Currently using	3851	54.60	2306	62.70
Used since last birth	744	10.50	413	11.30
Used before last birth	902	12.80	419	11.40
Never used	1558	22.10	538	14.60
<b>N</b>	<b>7055</b>	<b>100</b>	<b>3676</b>	<b>100.00</b>

Table 2: Percentage of Respondents Aged 10-49 According to the Used (Currently) of Any Specific Contraceptive Methods in Bangladesh

Contraceptive methods	Rural		Urban	
	No. of respondents	Percentage (%)	No. of respondents	Percentage (%)
Pill	1722	24.4	963	26.2
IUD	45	0.6	17	0.5
Injections	672	9.5	353	9.6
Condom	205	2.9	297	8.1
Sterilization				
Female	361	5.1	214	5.8
Male	46	0.7	21	0.6
Periodic abstinence	464	6.6	240	6.5
Withdrawal	241	3.4	152	4.1
Norplant	48	0.7	30	0.8
Other	47	0.7	19	0.5

Table 3: Respondents Aged 10-49 According to the Type of Used Contraceptive Methods in Bangladesh

Type of contraceptives methods	Rural		Urban	
	No. of respondents	Percentage (%)	No. of respondents	Percentage (%)
Modern	3099	43.9	1895	51.6
Traditional	705	10.0	392	10.7
Folkloric	47	0.7	19	0.5
No method	3204	45.4	1370	37.3
<b>N</b>	<b>7055</b>	<b>100.0</b>	<b>3676</b>	<b>100.0</b>

Table 4: Preferred Future Methods among Currently Non-user

Preferred future methods	Rural		Urban	
	No. of respondents	Percentage (%)	No. of respondents	Percentage (%)
Total currently non-user	3204	45.4	1370	37.3
Non-user not intend to	1406	43.88	661	48.25
<b>Non-user intend to</b>				
Pill	806	25.16	327	23.87
IUD	5	0.16	7	0.51
Injections	334	10.42	112	8.18
Condom	33	1.03	38	2.77
Sterilization				
Female	21	0.66	10	0.73
Periodic abstinence	33	1.03	8	0.58
Withdrawal	10	0.31	6	0.44
Norplant	21	0.66	7	0.51
Other	5	0.16	0	0
Don't know	530	16.55	194	14.16

Table 5: Percentage of Women Using Contraceptive According to their Fertility Preference

Fertility preference	Rural		Urban	
	No. of respondents	Percentage (%)	No. of respondents	Percentage (%)
Wants within 2 years	147	3.8	115	5.0
Wants after 2+ years	827	21.5	519	22.5
Wants, unsure timing	23	0.6	15	0.7
Undecided	55	1.4	44	1.9
Wants no more	2391	62.1	1378	59.8
Sterilized	407	10.6	235	10.2
Declared in fecund	1	0.0	0	0.0

Total	3851	100	2306	100.0
-------	------	-----	------	-------

### 6.3 Contraceptive Use in Relation to Self-reported Need

In this section, fertility preferences and contraceptive use are discussed jointly to analyze contraception in relation to need, namely the desire among the rural-urban respondents to avoid future childbearing altogether, or to postpone the next birth.

Table 5 shows the relationship between contraceptive use and self-reported desire to limit family size or postpone the next birth. Among the respondents of rural and urban areas who said they wanted no more children, 62.1 and 59.8% were practicing contraception. This compares to a figure of 21.5 and 22.5% respectively for those who said they wanted another child after 2+ years later. Thus, "limiters" were found to be nearly thrice as likely to use contraceptives, as were the "spacers". The sharp distinction between "limiters" and "spacers" becomes more complex if the length of time that women wish to postpone the next birth is taken into account. A little more than 10% of the respondents both from the rural and urban areas of Bangladesh are declared themselves as sterilized. The results also indicate that contraceptive use among the long term "spacers" (want child after 20+ years later) had a level of contraceptive use high than the "limiters" (who want child within 2 years).

### 7. Conclusions and Policy Recommendation

The results show that the urban-rural differentials in contraceptive use clearly exist in Bangladesh. Besides, more than 20% of the rural married women aged 10-49 had never tried any method of contraception. This figure is about 15% for the urban women. Among the available methods, the pill is widely used both in urban and rural areas because of its availability to doorsteps, the second most common is injections and then periodic abstinence. The study also indicates that despite of wide spread publicity about modern contraceptive methods, traditional methods account for a substantial proportion of contraception use both among rural and urban women. Program managers, therefore, should give due importance to this fact. Of all the currently non-user, their future intension is higher to pill and then to injections.

In this regard, this study contains a number of implications for policy purposes that could be useful in devising ways to increase the contraceptive prevalence rate both among the rural and urban areas and thus bring about a further reduction in fertility in Bangladesh. These are as follows:

- i. Provide education to people in a way that would make them aware logically of the benefits of a small sized family and the problems associated with a large family;
- ii. Motivational campaigns to promote the two-child norm and legitimize the use of modern methods of contraception must be enhanced by ensuring the supply of contraceptives free of cost or at a very low cost to the couples belonging especially to the low-income category;
- iii. Create awareness among the people about the negative health, social and economic consequences of early marriage, early pregnancy and large family size. This could be done through special information, education and communication (IEC) campaigns, regular home visits by family welfare visitors (FWVs) and family welfare assistants (FWAs).

### References

- (GOB, 1994:9).  
 Bangladesh Bureau of Statistics (BBS) (2006): Statistical Year Book, 2004. Dhaka: Planning Division, Ministry of Planning, Government of the People's Republic of Bangladesh.  
 Health, Nutrition and Population Sector Program (HNPS) (2003): **Government of the People's Republic of Bangladesh.**

Government of Bangladesh (GOB) (1973). The First Five-Year Plan 1973-78, Planning Commission, Ministry of planning, Dhaka, Bangladesh.

Mabud, M. A. (1992): Bangladesh's Population Problem and Program Dynamics.

Mitra, S. N. and Associates (2005): Bangladesh Demographic and Health Survey (BDHS), 2004, National Institute of Population Research and Training (NIPORT), Dhaka, Bangladesh.

Population Control Program in Bangladesh: Past, Present & Future (1985): By IEM Unit, Directorate of Population Control, Dhaka, Bangladesh.

## 'The difficult surgical patient' in a developing world context. How cultural beliefs, local customs and superstition affect surgical treatment.

- David O. Irabor,  
 Department of Surgery, College of Medicine  
 University of Ibadan, Nigeria; FWACS,  
 Department of Surgery, University College Hospital  
 Ibadan, P.M.B. 5116 Ibadan, Oyo State, Nigeria  
 E-Mail: [dirabor@comui.edu.ng](mailto:dirabor@comui.edu.ng), [irabordavid@yahoo.com](mailto:irabordavid@yahoo.com)

**Key Words:** Difficult patient ethics, Developing world

### Abstract

This paper presents different clinical scenarios that show that the concept of a difficult patient may have a different significance in a developing country like Nigeria as against developed nations like the USA and the UK.

### Introduction

The 'difficult' African patient is usually unconscious of the fact that his actions may prove inimical to provision of ideal medical care; he may find it bewildering that his medical caregiver is exasperated with him purely on the grounds that he did not adhere strictly to his/her treatment regimen. Was he not supposed to fast like a good Muslim during the Ramadan? Should thoughts of swallowing a prescription medication every 8 hours or so influence him to stray from the holy path his prophet has carved out for him? This is purely a hypothetical example.

In Africa, where community-based mores are practiced it is important for a health care-giver to acknowledge that taking care of a patient involves the whole community, as such factors outside orthodox medical teaching may influence a patient's reaction/behavior towards a proposed plan of treatment. Some factual reasons for not being a 'good' patient are discussed below. These are borne out of my experience as a consultant surgeon (the buck stops at my table) and some of these I share below.

**Cultural beliefs/Superstition:** How does one convince a patient with a malignant melanoma of the foot that he/she requires an amputation? In Africa generally and Nigeria specifically, there are very strong beliefs regarding reincarnation. How do you convince a patient who wishes to return to the earth whole with all limbs and major organs intact in another life to consent to an amputation? This

situation also holds for women who have cancer of the breast; many would not want to be re-born with unilateral amazia!<sup>1,2</sup>

**Poverty:** It has been estimated that 80% of Nigerians live on less than \$1 a day<sup>3</sup>. Many cannot afford \$100 for minor (day case) operations talk less of about \$300 for major surgery. Because of the Nigerian culture of not admitting to negative attributes (it's like cursing one's self), many will not tell you they cannot afford surgery but will keep hopping from one hospital to another hoping to find a 'cheaper' deal. By the time they have 'done the rounds' and are back to you, the clinical status is obviously worse than before.

**Fear of operations/anaesthesia:** There are patients who would refuse major surgery because of general anaesthesia. Probably a great grand-parent died under anaesthesia, thus the lore is passed down future generations to avoid major surgery/anaesthesia regardless of whether the initial tragedy was something that cannot be inherited by subsequent offspring.

**Ability to accept inevitability of death (especially Muslims):** There you are; a diligent surgeon who is so moved by the plight of his patients to do whatever he/she can to ameliorate their conditions, then you meet with a patient who seems so unconcerned about a cancer he has that he does not seem to be as geared up towards the multi-staged treatment you are outlining for him. These are patients who do not fear death or discomfort. If the treatment involves mutilating surgery like a mastectomy (removal of a breast) or orchidectomy (removal of a testis), they prefer to die whole so that in their reincarnation they may appear complete also. (see superstitious beliefs above)

**Beliefs about impotence from anal surgery:** Surgical operations for common benign anal conditions like hemorrhoids, anal fissures and anal fistulae have really dwindled in men. It is widely believed that erectile impotence occurs after such operations. No one knows the source of this information; it is not part of the known documented complications of these operations, yet talk as you may, these men are not convinced. It takes a more tragic note when such people do have malignant lesions of the anus and rectum. The more curative operations may indeed cause erectile impotence<sup>4</sup> which now gives more fuel to the furnace of reluctance of these patients to subject themselves to the operation. In Sub-Saharan Africa, erectile impotence is a problem for which death is preferable. Indeed the presence of a colostomy on its own poses significant social and psychological problems in the male recipient. Patients with permanent colostomy in Nigeria have been reported to commit suicide<sup>5</sup>.

**Consent from family head in emergency/pediatric cases/women:** Very often when children are sick, the mother is not expected to give consent for treatment even if it is an emergency. The father of the child or a senior male family member has this duty. Sometimes the father is still at work which means no definitive treatment can commence (especially if a surgical emergency) until he arrives to give consent. One has to understand the patriarchal system practiced in Nigeria. Overriding this process usually makes things worse for the woman as she could be kicked out of her matrimonial home for usurping the duties of the head of the family<sup>6,7</sup>.

**Family ties:** In Nigeria, family engagements sometimes override health issues. A patient booked for surgery will ask for a postponement for things more important like family functions e.g. weddings, graduations, house-warming ceremonies, etc. Being absent from such events is seen as

an insult to the family and its wide extensions. As long as you are alive it is mandatory that your presence is felt. After all, these are the people who will support you in your infirmity. If you turn your back on them you will have no support (financial, material, religious etc) while in hospital. This also buttresses the fact that in some situations the fear of death is secondary to the fear of the living.

**Religion/ faith healing:** Most Nigerians are very religious people and they adhere strictly to the teachings of their pastors or religious leaders. Many of those who go to Pentecostal Christian churches are taught that being sick reflects on the strength of your faith. In other words if you are sick it means you are not holy enough to withstand the afflictions of the devil. Very often such people go from church to church and crusade to crusade looking for miracle cures. By the time they present to hospital the case has gone beyond cure.

**Shame:** especially from traditional healers who would rather die than allow people to know they come to orthodox hospitals for surgery or any other form of treatment.

**Half-knowledge:** once in a while you have patients who are semi-literate, but who, by virtue of wealth, have experienced international travel. They may have had consultations with general practitioners in the United Kingdom or other European countries, thus they regale you with a lot of unnecessary information and questions. They demand for the most unlikely alternatives to treatment or unnecessary investigations. They will not make any decisions about operative interventions until they call their offspring in the UK or USA who are then requested to contact their GPs asking them to vet your recommended surgical treatment before they assent to it. Sometimes this process may take weeks. Indeed there are some who go online to seek medical information and without having any idea of the various treatment options they pick up online they start to suggest treatment options they think they prefer. In most cases these options are not available in Nigeria.

## Discussion

The concept of the difficult patient arose because of the identification of a group of patients who end up causing distractions from effective medical care, frustrate efforts of their doctors, complain about their lack of adequate medical care and eventually do not receive the proposed care from their designated care-givers (i.e. doctors, nurses and paramedical staff)<sup>8,9</sup>. In an environment where litigation is common for medical malpractice it is important for doctors to identify these group of patients so that strategies may be put in place to ensure that proper care is administered to this patients. This goes a long way to protect the doctor against malpractice and to guard against a natural bias against such patients. Other appellations given these patients include 'hateful patients', 'frustrating patients' and 'problem patients' and they have been shown to have a significant level of psychiatric problems<sup>9</sup>. In the developing world however, especially Nigeria, litigation against a doctor is rare for patient-related problems arising from negligence or incompetence<sup>10</sup>.

Thus the problem of a difficult patient really does not stem from mischief or malice towards his/her care-givers nor does it stem from a psychopathic personality, it is made up of a myriad of social, cultural, religious and personal/public beliefs that, singly or in combination, can confound the most well-meaning surgeon. It has been reported that Nigerian patients prefer not to exercise their autonomy in the decision-making towards proposed surgical operations<sup>10</sup>. Indeed they welcome paternalism: they have come to you, the all-powerful doctor to take care of them, they don't want options of treatment, they

want *your* treatment because they trust that you will do what is right for your fellow-man (or woman). Therefore it is all the more stressful to the surgeon when he 'lays down the rule' for the patient to consciously or unconsciously throw impediments in the path of this proposed treatment. In any surgeon who is ignorant of these socio-cultural factors, some of these reasons for not assenting, consenting or turning up for a procedure may appear unacceptable, unreasonable or untenable. Thus he/she may label such patients as uncooperative or difficult.

Some authors may adduce a breakdown in the physician/patient relationship through lack of adequate patient/physician communication, failure to recognize the patient's needs and expectations and failure to understand the phenomenological and symbolic aspects of the patient's illness as the reason why some patients are perceived as difficult<sup>11</sup>. In a developing African country like Nigeria, the emphasis should be on the symbolic and phenomenological aspects of the individual's perception of his disease and the treatment offered. Accepting that a patient may prefer to die rather than accept a potentially curative but mutilating operation should stir a profound feeling of respect, if not humility, in a surgeon rather than annoyance or frustration.

It is true that orthodox medical training in Nigeria is western-oriented and cultural beliefs and local customs as they affect medical treatment are yet to be part of the training syllabus yet the modern Hippocratic oath we swear by states that 'I will remember that there is art to medicine as well as science, and that warmth, sympathy and understanding may outweigh the surgeon's knife or the chemist's drug'<sup>12</sup>. There is no doubt that things are made easier (for the doctor's conscience) if the patient refuses a treatment after adequate information has been given, however when the patient has accepted the proposed treatment but keeps re-scheduling the date of surgery, that gives the surgeon stress (see family ties above).

All authors are in agreement that all cases of informed refusal should be thoroughly documented in the patient's medical records.<sup>13,14,15</sup> That way, no talk of malpractice should occur in future.

The extreme side of the spectrum of remedies for managing ethical difficulties comes from Israel where the Israeli legislators have created a mechanism to allow ethics committees to override patients' informed refusal and treat them against their will<sup>16</sup>. It is very unlikely that this kind of situation will happen in Nigeria because it would mean the trampling-on and dismantling of centuries-old cultural hierarchical structures that have been laid down to preserve the clan or extended family unit<sup>17</sup>.

In conclusion, a western-trained surgeon who wishes to practice in Nigeria must be willing to accept and accommodate seemingly trivial (to him) impediments to speedy execution of a proposed surgical operation in order to respect philosophico-cultural and superstitious beliefs of his catchment population.

## References

- Izibili MA. Reincarnation "Iroso" in Esan: A myth or reality. *Stud Tribes Tribals* 2008; 6; 105-109.
- Stevenson I. The belief in reincarnation among the Igbo of Nigeria. *African and Asian Studies* 1985; 20; 13-30
- United Nations Capital Development Fund. Countries and Regions. <http://www.uncdf.org/english/countries/nigeria/index.php> Accessed 28/01/09
- Aghaji MAC, Obiekwe OM. Sexual function in males following abdomino-perineal resection in Nigeria. *Cent Afr J Med* 1991;37; 301-303.
- Adekunle OO, Abioye AA. Adenocarcinoma of the large bowel in Nigerians: A clinicopathologic study. *Dis Col Rect* 1980; 23; 559-563
- Aina IO, 1998. 'Women, culture and society' in Amedu Sesay and Adetanwa Odebiyi (eds). Nigerian women in society and development. Dokun publishing house, Ibadan.
- Asiyanbola AR, 2005. Patriarchy, male dominance, the role and women empowerment in Nigeria. <http://iussp2005.princeton.edu/download.aspx?submissionId=50005>
- Haas HJ, Leiser JP, Magill MP, Sanyer ON. Management of the difficult patient. *Am Fam Physician* 2005;72:2063-2068
- De Marco MA, Nogueira-Martins LA, Yazigi L. Difficult patients or difficult encounters? *Q J Med* 2005;98;542-543
- Irabor DO, Omonzejele P. Local attitudes, moral obligation, customary obedience and other cultural practices: Their influence on the process of gaining informed consent for surgery in a tertiary institution in a developing country. *Developing World Bioethics*. doi: 10.1111/j.1471-8847.2007.00198.x
- Anstett R. The difficult patient and the physician-patient relationship. *J Fam Pract* 1980;11;281-286
- Hippocratic Oath. Modern version. [http://www.pbs.org/wgbh/nova/doctors.oath\\_modern.html](http://www.pbs.org/wgbh/nova/doctors.oath_modern.html) Accessed January 20 2009.
- Faden R, Faden A. false belief and the refusal of medical treatment. *J Med Ethics* 1977;3;133-136.
- Hurst SA, Hull SC, Duval G, Danis M. How physicians face ethical difficulties: a qualitative analysis. *J Med Ethics* 2005;31;7-14
- Bramstedt KA, Nash PJ. When death is the outcome of informed refusal: dilemma of rejecting ventricular assist device therapy. *The journal of heart and lung transplantation* 2005;24;229-230.
- Gross ML. treating competent patients by force: the limits and lessons of Israel's patients' rights act. *J Med Ethics* 2005;31;29-34.
- Yoruba Families - Yoruba culture and the meaning of marriage. <http://family.irank.org/pages/1773/Yoruba-Families-Yoruba-Culture-Meaning-Marriage.html> Accessed January 30, 2009.

## Acknowledgement.

I am grateful to the entire executive of SARETI (South African Research Ethics Training Initiative) for giving me the opportunity to be trained in research ethics during my fellowship in 2005.

## Ethical and Legal issues in Pain management and End of Life Care in USA

- Vijay Rajput, MD, FACP

Associate Professor of Medicine, Robert Wood Johnson Medical School

Cooper University Hospital, Camden NJ, USA

Email: Rajput-VJ@CooperHealth.edu

## Introduction

Physicians have often been accused for under-treating pain at all levels of care in the health care system. The term "opiophobia" has been used to describe the physicians' aversion to optimal use of opiates in practice. There is a complicated legal and regulatory environment for the hospitalist. The proper use of opiates in pain management can be described as a sword with two edges. Opiates are a major concern regarding pain relief; legal and ethical issues often arise in respect to under medicating as well as over medicating. This paper will help to identify the major areas of pain relief's ethical and legal domain in hospitalized patients, as well as understanding prior legal prosecution related to pain management. Hospitalists should also describe the "double effect" concept of pain relief, understand ethical conflict related to terminal sedation and document this clinical-ethical reasoning. Lastly, a hospitalist should be able to understand futility during end of life care.

### Epidemiology

A recent survey by the Stanford Medical center says that one in five American adults have suffered from chronic pain. They have estimated a 61 billion dollars loss in productive time. Chronic non-malignant pain is poorly managed up to 70% of the time especially in nursing homes. They also stated that ninety percent of cancer pain can be controlled with available option and about 11% of patients in the Emergency Department are seeking treatment for a chronic pain condition. A 2003 survey showed that 19.5 million or 8.2% of the population use an illicit drug at least once a month and 31.2 million use pain relievers for non-medicinal purposes. (2)

### Barriers in delivering pain medication

As a general rule the six common goals of patient care described by Institute of Medicine are safety, effectiveness, patient centered, timeliness, efficiency and equitably. These goals should also be true for pain relief (1). We all know that both acute and chronic pain are difficult to measure, and Hospitalists have to make subjective decisions for the dosage and choice of pain medication. A recent paper from *Emergency Medicine* has described seven steps of delivering pain medication: arrival and registration, followed by nursing assessment and triage, placement in room, primary nurse assessment and documentation, physician evaluation, physician order pain medication, nursing staff obtaining pain medical and administration of pain medication by nurse. (3) Each step can identify prioritization, educational deficiency, pain assessment inadequacies, and cultural challenges. There are also many legal issues surrounding pain relief that Hospitalists need to take into account. These are usually under the general rubric of malpractice. Under medicating or over prescribing to a patient, failure to refer a patient to a pain management specialist, Opiates used during the care of dying patients have been frequently challenged in court. One must abide by the national standards of care, clinical practice guidelines, web-based databases, and other reasons to conform to these standards of care.

### Failure to refer to pain specialist

The common law tort of "duty to refer" is well established in medical malpractice laws. In the *Freeman v. Cleveland clinic foundation* case, a surgeon was found liable for not referring a young patient with chronic knee pain to a pain specialist. In the case of *Johnson v. Kokemoor*, a physician was found inexperienced with a certain procedure and then failed to refer the patient to a more experienced physician. (4, 5, 6) Both cases have an implication to hospitalist practice, since we are treating many other surgical specialties patients under hospitalist care.

### Inadequate pain management as corporate negligence

There have been many incidences of institutional failures regarding pain management. MD Anderson spends 4.7 million dollars on pain management annually. The general duty to manage pain in complex health systems is extremely difficult. Supporting study in 1995 found that poor communication, aggressive treatment, and inattention to pain and suffering contribute to these institutional failures. The AHCPR (Agency for Health Care Policy and Research) published guidelines in 1992 for acute pain management in responses to these malfunctions. There is also cause for concern due to corporate negligence. (9, 10, 11)

### Subordination of pain relief to diagnosis

Pain is viewed as a symptomatic guide to diagnosis. The ethical duty to relieve pain is well established. In 1920, Dr. Zachary Cope stated, "Though it may appear cruel, it is really kind to withhold morphine until certain of surgical diagnosis." In 2000, American college for Emergency Physicians (ACEP)

reported that, "narcotics given to patients with abdominal pain facilitates diagnostic evaluation, is safe, humane and in some cases improve diagnostic accuracy." In 2003, the American Journal of Surgery paper commented that, "analgesia should be given prior to diagnosis only with the knowledge and consent of the surgeon who assume the responsibility for decision making." (12, 13, 14) Eighty six percent of emergency department physicians believe that this literature supports the practice of pain medication prior to confirming diagnosis. Eighty nine percent of surgeons still prefer to hold the pain medication prior to surgical evaluation. This will be more critical and important as we are co-managing more and more surgical patients in hospitals.

### Civil and criminal prosecutions surrounding pain management and End of life:

Several cases have come up in legal systems over the last two decades. Complexity around legal and regulatory issues has created confusion among patients, families and all the health care professionals. The moral reservation of clinicians and family members may result in under treatment of catastrophic symptoms or the subsequent guilt and its morbid sequelae. Many cases lead to criminal prosecution involving the care of dying patients. Cases in early 1990s were brought to prosecutor office related to improper use of opiates. Many of them lead to mandatory education in end of life and palliative care in many states. The case of *Estate of Henry James vs. Hillhaven Corporation* was important to the relation of pain and palliative care. A nursing home patient with advanced prostate cancer was given inadequate pain medications by nursing staff even after the physician gave the order. (15)

Other cases of negligence occurring during the treatment of pain were *Bergman v. Eden medical center* and *Tomlinson v. Bayberry medical center*. In the latter case, the surviving family member sued the physician, hospital and nursing home for inadequate pain control, denying the change of pain medication. The physician was sued under the elder abuse statute in California that provides a private right for elderly persons and their surviving family. (16) In 2001, all physicians are to be trained in end of life pain management in order to maintain medical licenses. In the case of *Weitzel v. Utah* (1999-2002), Dr. Robert Weitzel, a psychiatrist provided opiates analgesia to a group of geriatric psychiatric inpatients with serious medical conditions, including renal failure, sepsis, stroke, and GI bleeding. Dr. Weitzel's uses of opiates had following discussions with the patients' families about using a palliative approach in their care; each patient died of an illness. Utah's medical board revoked Dr. Weitzel's license; he was charged with murder, but found guilty of two "lesser" counts of negligent homicide. In a recent criminal prosecution of end of life care, the Louisiana Attorney General issued warrants for the arrests of Dr. Anna M. Pou and two nurses on charges of second degree murder for the deaths of four patients at one hospital during New Orleans during Hurricane Katrina. Criminal prosecution involving the care of dying is based upon many things. To prove the basic elements of criminal act and act to be intentional. Terminal pain issues are never investigated unless nurse, supervisor or ethics committee are involved and almost all cases are in hospital settings where Nurses were most common informants. There are three major categories; withdrawal of life sustaining support, and accompanying pain meds, then, use of opiates as terminal sedation and lastly, end of life care that includes use of fatal agents like insulin, KCL, chloroform. In 1997, U.S Supreme Court endorses terminal sedation as an alternative to Physician Assisted Suicide (PAS), intensifying the legal debate in the "right to die" controversy. It was a palliative care option long before the Supreme Court intervention to relieve physical pain, produce unconscious state before withdrawal of life support and relieve non-physical pain. (17, 18)



### Common safeguards and justification for pain medication at end of life:

Clinical safeguards for terminal sedation are to ensure effectiveness of palliative care and fully informed consent from the patients and families. These safeguards also maintain diagnostic and prognostic clarity with respect to patient's disease and lifespan. It is prudent to obtain independent second opinion and provide documentation and review for complex cases. (19) Many of the moral and ethical dilemmas surrounding pain medication at end of life can be justified ethically and may be found legally under the doctrine of "double effect." The doctrine needs to satisfy four conditions; the act creating the risk of adverse consequences must be "good" or morally neutral: the actor must intend the "good" effect and not the "bad" effect. Although bad effect may be foreseen the "bad" effect must not be means to the good effect; the "good" effect must outweigh the "bad" effect.(20) The rule of double effect is a conceptually and psychologically complex doctrine that distinguishes between permissible and prohibited actions by relying heavily on the clinician's intent. Timothy Quill has said, "a proportionately good effect (relief of suffering) may overcome a foreseeable bad effect (causing death)...as long as the actor does not intend to accomplish the bad effect."(21) Fleishmann said that the rationale for Aggressive Analgesics, "the risk of death is justified, not because it is unintended but because there is no alternative approach that makes the risk of death less likely and the alleviation of suffering possible."(22) Quill said, "Just as State may prohibit assisting suicide while permitting patients refuse unwanted life saving treatment, it may permit palliative care related to that refusal which may have the foreseen but unintended 'double effect' of hastening death" concerning the Supreme Court and double effect.(23) Clinical intentions may sometimes be more complex and ambiguous than those (accounted for by the double effect) does not diminish the fact that the invocation of this principle allows the patient and treating clinicians to maintain an ethical equilibrium in this difficult situation. (24)

### Simple guidelines for complex word "futility"

The Latin word *futile* refers to action or instruments that are inherently "leaky." Medical futility is any effort to provide a particular treatment that is highly likely to fail and whose rare exceptions cannot be systematically produced.(25) Three conceptual possibilities are treatment do not provide positive effects, the radical treatment, whose side effects outweigh the positive effects emerging from the treatment and it is futility to treat a disease, when the patient is suffering from more real time life threatening disease. Physiological futility permits physician to withhold the treatment modality on the basis of no impact on patient care. These need to meet professional standards and inform shared decisions with patient and family, and have the opportunity to obtain a second opinion. If issue is not physiological futile, but appropriateness of sustaining a severely deteriorated life, then the scope of professional judgment is limited. This should not be unilateral medical judgment. Family and patient must be given the opportunity to participate in decision making and one may need your hospital ethics committee consultation. There are few states have legislative guidelines for futile care. As general futility is an elusive concept, the term is used more to make value-laden judgments and the value is usually a "quality of life" concept. It can be easily misinterpreted as rationing of resource and medical paternalism. Avoid the word "futility" in communication and documentation, as it stops conversation.

### Documentation of Clinical Ethical Reasoning

Hospitalists are now single major providers for many hospitalized patients it is reasonable to well document the complex clinical-ethical problem in following way: (26)

- State the problem plainly
- Gather and organize the medical, social data
- Patient's goal and preferences
- Ask? Is the problem ethical?
- Is more information or dialogue needed? With ethics committee or risk management
- Determine best course of action and support your position

### Acknowledgments

I would like to thank Emily Hartsough for her constructive comments in the preparation of this manuscript.

### References

1. IOM & Committee on quality Health Care in America. Crossing the quality chasm: A new health system for the 21st century. Washington D.C. National Academy Press. 2001
2. Todd KH. Chronic Pain Aberrant Drug related behavior in the Emergency Department. *Journal of Law, Medicine &ethics* 2005;33:761-769
3. Fosnocht DE et al. "changing attitudes about pain control in emergency medicine" *Emergency Medical clinics of North America.* 2005; 23:297-306
4. 713 N.E.2d 33(1998)
5. 546 N.W. 495(Wis 1996)
6. Furrow BR. Pain management and provider liability: No more excuses. *J Law Med & ethics* 2001; 29:28-51
7. 453 N.W.2d 634 (Iowa 1990)
8. 385 N.W.2d 732 (Mich. Ct.app.1986)
9. Dan B Dobbs. *Law of Torts* 1050( 2000)
10. Cassel CK. *Health affairs* ( 2000)
11. AHCPH Pub. No. 92-0032 (US health services Maryland 1992)
12. Nissman SA et al. "cortically reappraising the literature – driven practice of analgesia for acute abdominal pain in the emergency room prior to surgical evaluation. *Am J Surg* 2003;185: 291-296
13. Graber Et al. "Informed consent and general surgeons' attitude towards the use of pain medication in the acute abdomen" *Am J Emergency Med* 1999; 17:113-116
14. Ducharme et al *The future of pain management in Emergency Medicine. Emergency Medicine clinic of north America* 2005; 23: 467-475
15. Super.ct. Div 89-cvs64, Hertford county, N.C Nov 20, 1990
16. Tucker KL. *Medico legal case report and commentary: inadequate pain management in context of terminal cancer, the case of Tomlinson. Pain Medicine* 2004; 5:214
17. *Washington v. Glucksberg*, 521 U.S.702 (1997)
18. *Vacco v. Quill* 521 U.S. 793 (1997)
19. Quill T, Byock I. *Ann Intern Med* 2000; 132: 408
20. Quill TE. *The rule of double effect New Eng J Med* 1997; 337:1768
21. Quill T. *The Rule of Double Effect — A Critique of Its Role in End-of-Life Decision Making* 337:1768-1771
22. Fleischmann AR. *Journal of Pain & Symptom Management* 15(1998):260-65
23. Quill, 117 S.Ct. 2293 n 11.
24. Portenoy RK, Cherny NI. *Palliative options. Journal of Palliative care* 1994;10:31
25. Cohen-Almagor R. *Language and Reality at the end of life. Journal of Law, Medicine & ethics* 2000; 28:267-278
26. Kaldijan L, weir R, Duffy T. *A clinician approach to clinical-ethical reasoning. J Gen Intern Med.* 2005; 20:306-311.



# A Review of Environmental and Health Effects of Nichemtex Textile Industry on Residents: An Evaluative Study

- P.O. Olawuni,  
Department of Urban and Regional Planning  
Obafemi Awolowo University, Ile Ife, Nigeria  
Email: olapeter1@yahoo.com

## Abstract

The increasing expansion of industries all over the world coupled with industrial activities has both negative and positive effects on its immediate surroundings. Thus, this study attempts at evaluating the environmental and health effect of Nichemtex Textile Industry on the surrounding residents after some years of expansion since 2002. Data for the study was collected from both the management of the establishment and the residents, targeting the household heads in one out of every ten houses. Upon subjecting the data collected to simple statistical analysis using frequency tables, graphs and percentages, the study discovers among others, a very significant degree of environmental problems caused by the industrial activities, coupled with a great effect on the health of residents. The study concludes by recommending among others, the employment of pollution prevention techniques, re-engineering processes to re-use by-products, improved management practices and employment of substitution of toxic chemicals. Constant environmental monitoring is also recommended. It is hope that these may likely bring about a sustainable healthy environment in the area.

## Introduction

The textile industry happens to be one of the oldest in the world, and is comprised of a diverse, fragmented group of establishments that produce and or process textile-related products for further processing into apparel, home furnishings and industrial goods. In the early seventeenth century of colonial America, textiles were primarily manufactured in New England homes. Flax and wool were the major fibers used, however, cotton, grown primarily on southern plantations, became increasingly important (Wilson, 1972). The improvement that occurred in the manufacturing industry in Europe in the eighteen and nineteenth centuries during the industrial revolution brought about the transition from domestic system to the factory system. Since the improvement, the environment in which humans live has been seriously competing with the waste generated by industries worldwide. This especially has to do with textile industries because the manufacturing activities go along with the use of chemicals in the pretreatment, dyeing, and other processes to provide the final product with desired visual and functional properties.

Nigeria too has witnessed rapid urban growth and technology advancement in the past few years and these have also brought about increasing industrial development coupled with various forms of environmental problems such as pollution and deforestation among others. These are produced in the form of solids, liquids, gases and air-borne particulate matter, which are emitted into the environment and in most cases, result to negative effects on human health.

However, contaminants of concern generated by many textile manufacturing plants include spent solvents and surfactants, polychlorinated biphenyls (PCBs) from

transformers and other machinery, asbestos from spinning machines or structures, bleaching products such as hydrogen peroxide, phosphates from detergents or water softeners, insecticides, phenol (a manmade substance used to make synthetics such as nylon), underground storage tank contents, waste oil, and other petroleum products. Solvents comprise the majority of hazardous waste generated by textile mills. Spent solvents are used to clean machinery and for dyeing, fishing, dry-cleaning, and other special operations, and they include tetrachloroethylene (PCE), trichloroethylene (TCE), benzene, and ethylene dichloride. These when released into the environment causes a lot health hazards to the people around. Health effects due to overexposure by inhalation, ingestion, or contact with these solvents include dizziness, headache, nausea, lung effects, liver and kidney diseases, unconsciousness, and even death. For example, *Toluene*, *Methyl Ethyl Ketone* and *Xylene*(mixed isomers) are commonly used in textile manufacturing processes, either in solvent coating operations or in printing operations.

Breathing moderate amounts of methyl ethyl ketone (MEK) for a short period of time can cause adverse effects on the nervous system ranging from headaches, dizziness, nausea, and numbness in the fingers and toes, to unconsciousness. Its vapours are irritating to the skin, nose and throat, and can damage the eyes. Repeated exposure to high amounts may cause liver and kidney defects. On the other hand, inhalations of toluene can cause headaches, confusion, weakness, and memory loss. It may also affect the way the kidneys and liver function. Short term exposure of human to high level of xylenes can as well cause irritation of skin, eyes, nose, and throat, difficult in-breathing, impaired memory, and possible changes in the liver and kidneys.

Since the 1950s, growing environmental awareness and concerns had since 1950s focused much attention on the interaction between development actions and their resultant environmental consequences. In developed countries, this has led to the agitation of explicit consideration of environmental factors in the decision – making process. A similar situation is now occurring in most developing countries, especially in Nigeria, but in this case it is often the responsibilities of the professionals in the Environment and Health Departments in Government Agencies that make such agitation. The involvement and agitation of these professionals gave birth to Federal Environmental Protection Agency (FEPA) and the subsequent State's Environmental Protection Agency in all the states of Nigeria.

It is important to note that the pace of industrialization and urbanization has far out – stripped the government's ability to cope with the side effects of these development, coupled with the fact that the state of health of an individual or population depends upon complex interactions of the physical, biological, political and social domains.

In realization of these, some authors have stressed the effect of DDT and other chlorinated hydrocarbons used as pesticides and herbicides, which annually threaten many species of animal lives and human beings. For example, fibre processing in the textile industry involves the use of a number of inorganic substances as chemical processes. Secondary liquor for removing fats, waxes and oil from fabric contain detergents (and hence, phosphate = PH) and caustic soda. Rinsing after scoring involves the use of hydro chronic acid. So, also common bleaching agents used in the textile industry are inorganic substances such as peroxide and hydrochloride. In the end, the wastewater from textile industry therefore contains a variety of inorganic substances (Gang, 1994), which in turn has some negative effect on aquatic species and human health.

Ibidapo (1986), Akintunde (1992), and Benavides (1992) in their various work discovered that wastewater effluents discharge from textile factories contributes chromium, leads, zinc, copper, oils, gasses and waxes. These an into

thousands of inorganic and organic acids, fats, oils, bleaching agents, dyes, pigments, phenolic compounds, turning agents, sulphides, ammonia among others, which are toxic in nature. It was further substantiated by Ademoroti (1988) that industrial wastes discharged into surface water bodies contain large quantities of raw materials, intermediate products, final products, co-products and by products, and of the auxiliary or processing chemicals used. These or course can be toxic, flammable or no biodegradable. Industrial effluents discharged into such media have been known to increase temperatures, reduce the amount of oxygen available and alter the chemical condition of natural waters. This in the end leads to widespread destruction of living organisms and their life supporting resources and processes

In a study conducted by Obot (1983) on industrial development planning and environmental pollution in Calabar, he observed the presence of thick haze offensive odour, fact deterioration of painted housing surfaces, darkened and dusky appearances of buildings and cars parked in certain quarters. It is important to note that textile industrial pollutants could be solid, liquid or gaseous in the form of organic substances, sodium salts (Na), free chloride and peroxides are some of the products of textile production. Other inorganic pollutants are oxides of Nitrogen (NO<sub>2</sub>).

As a matter of fact, health affects of carbon monoxides (CO) are due to decreases in the oxygen carrying capacity of blood and of disruption in cytochroness functions. In human beings especially, the exposure begins with low-level of headaches fatigue and feverish conditions.

In another discovery made by Schwartz, 1995, the major health concern associated with exposure to high concentration of SO<sub>2</sub> includes effects on breathing, respiratory illness, alteration in pulmonary defenses and aggregation of existing cardiovascular diseases.

Furthermore, another important consideration must be given to noise pollution, which is an attribute of any industry. Noise is an unwanted sound, causing interference in any given communication system. It is worth therefore, that industrial activities in the form of production process through plants contribute immensely to noise pollution in many Nigerian cities. Whereas, it is recommended in Nigeria that daily exposure to noise for workers should not exceed 90dB daily for a 8-hours working period (FEPA,1991). In his earlier study on the health effects of Nichemtex Textile Industry on residents, Olawuni, 2003 opined that there existed a very significant degree of environmental problems in Lasori village, especially in the area of liquid waste generation. It is in the light of the above and the expansion that took place between years 2002 and 2008 in this industry that this study intends to provide information on the waste generated and released as pollutants from this textile industry. It will also examine the environmental problems and its consequential related ill-health on the surrounding residents, since its expansion in the year 2002.

### Study Area

Nichemtex industry plc was incorporated in Nigeria as a public company, on 3<sup>rd</sup> August 1971. It is located in Lasori (Abuja) village, Ikorodu, Lagos State, and about the largest industry in the area, covering an area of 143.43 acres of land with over 8 ,000 employers. The objectives of the founders, Cha Chin Mining Limited, the Federal Government of Nigeria, the Lagos state government and the Nigerian Industrial Development Bank Limited, were to establish and operate an integrated synthetic fibre and textile plant to supply synthetic fibre and fabrics to the Nigerian market. Apart from a polyester / cotton, spinning and weaving mill, which the company operates at present, the construction of polyester stable fibre plant has recently been completed. It is indeed a highly operative company that requires a thorough

environmental consideration, when one looks at the level of operations, especially the types of chemicals used, and the likely after effects on the residents of Lasori village, which were over 12,000 inhabitants.

The objectives of this study are to:

- (i) Examine the current types, magnitude and treatment of waste generated by Nichentex Textile Industry Plc.
- (ii) Evaluate the impact of the industry's pollutants on the local environment.
- (iii) Investigate various health hazards resulting from this industry on the residents and
- (iv) Suggest way of reducing the enormities of pollutants resulting from the industrial activities.

### Methodology

In carrying out this study, both primary and secondary data as well as reconnaissance survey were employed. The primary source consists of two hundred structured questionnaires, which addressed issues like industrial pollutant, residents' social economic factors and other environmental factors. The secondary survey consists of relevant documents about the industry, collected from magazines, journals and news paper. Systematic random sampling technique was adopted for questionnaire administration on residents. This takes the form of selecting one out of every ten houses, targeting the household heads in the study area. Simple statistical analytical techniques were adopted for data analysis. These include frequency distributions and percentages.

Educational Background	No. of Respondents	Percentage (%)
No formal Education	22	11%
Primary School	98	49%
Junior Secondary School	52	26%
Senior Secondary School	24	12%
Higher education	4	2%
Total	200	100%

Table 1: Education Background of Respondents

Table 2: Occupational Distribution

Occupation	N Respondents	Percentage (%)
Farmer	74	37%
Trader	32	16%
Artisan	39	19.5%
Casual Worker	42	21%
Civil Servant	13	6.5%
Total	200	100%

Table 3: Marital Status

Marital Status	No. of Respondents	Percentage (%)
Single	18	9%
Married	164	82%
Divorced	12	6%
Widow(er)	6	3%
Total	200	100%

Table 4: Nature of Waste Generated

Nature	No of respondents	Percentage
Solid	27	13.5
Liquid	103	51.5
Gaseous	70	35.0
Total	200	100.0

Source: Field Survey, June 2002

As regards the generated effluents by the industry, 72% of the respondents (Table 6) claimed that, these were discharged into Lasori River close to the industry, and this is the only major river serving the study area, because, a vast majority of respondents (82%) claimed it is their source of supply for domestic uses (Table 7).

Despite the discharge, the company management did not show much concern about the environmental problems in the area. As revealed from table 8, 53% of the respondents claimed, the management showed a nonchalant attitude while 43% claimed non-cooperative attitude is of paramount importance to the management. It is further revealed by

majority of the respondents (96%), that the industrial pollution in the area usually leads to ill health (Table 9). These are mostly environmental related ill health as reported by respondents in the study area. According to Table 10, those identified environmental related ill health include: headache, catarrh, cough, malarial fever, typhoid fever, diarrhoea, dysentery, cholera, eye irritation, skin diseases and stomach ache. The table revealed that, a total of 72% of the respondents had one or more reported incidence of environmental related ill health. Out of the total respondents, (8.7%) had skin rashes, (8.55%) had malaria fever, (8.27%) had typhoid fever and (7.36%), headache among others.

Table 5: Respondents opinions about different Environmental Problems

Problem	Very Significant (5)	Significant (4)	Just Significant (3)	Not Significant (2)	Not at all Significant (1)	Total	Ranking
Air pollution	64 (420)	62 (248)	32 (96)	15 (30)	7 (7)	801	4.01
Noise Pollution	87 (435)	63 (252)	38 (114)	8 (16)	4 (4)	821	4.10
Surface water pollution	102 (510)	68 (272)	15 (54)	7 (14)	5 (5)	855	4.28
Underground water pollution	75 (375)	80 (320)	30 (90)	10 (20)	5 (5)	810	4.05
Flooding	20 (100)	80 (120)	20 (60)	102 (204)	28 (28)	512	2.56
Offensive odour	92 (460)	76 (304)	30 (900)	2 (4)	0 (0)	858	4.29
Solid waste	60 (300)	48 (192)	52 (156)	28 (56)	12 (12)	716	3.58
Effluent waste	108 (400)	63 (252)	20 (60)	6 (12)	3 (3)	867	4.34
Food poison	80 (400)	87 (348)	22 (81)	3 (6)	3 (3)	838	4.19
Total							35.40

Source: Field Survey, June 2002 Mean Ranking:  $35.40 \div 9 = 3.82$

Table 10: Self Reported Environmental Related Ill Health

	Headache	Catarrh	Cough	Malaria Fever	Typhoid Fever	Diarrhea	dysentery	Cholera	Eye Irritation	Skin rash	Stomach ache	Total
Yes	162	102	152	188	182	141	141	102	138	191	82	1581
%total	7.36	4.6	6.9	8.55	8.27	6.4	6.4	4.6	6.27	8.7	3.7	71.9
No	78	98	48	12	18	59	59	98	62	9	118	619
%total	3.5	4.5	2.2	0.6	0.8	2.6	2.6	4.5	2.8	0.4	5.4	28.1
Total	200	200	200	200	200	200	200	200	200	200	200	2200

Table 6: Method of Waste disposal

Method	No of respondents	Percentage
Water bodies	143	71.5
Burning	19	9.5
Buried	38	19.0
Total	200	100.0

Table 7: Source of Water Supply

Source	No of respondents	Percentage
Stream river	168	81.5
Well	27	13.5
Pipe borne waste	4	2.0
Bore hole	1	0.5%
Total	200	100%

Source: Field Survey, June 2002

Table 8: Reaction of the Company

Reaction	No of respondents	Percentage
Nonchalant attitude	105	52.5
Clean up	2	01.0
Provision of facilities	8	04.0

Uncooperative	85	42.5
Total	200	100.0

Source: Field survey, June 2002

Table 9: Effect of the Industry on Health.

Option	No of respondents	Percentage
Yes	192	96.0%
No	8	4%
Total	200	100.0

Source: Field Survey, June 2002

### Discussion and Findings

The study revealed that majority of the respondents has primary (49%) and secondary (26%) school education, and engaged mostly in farming, trading, casual work and artisan (Table 2). They were also almost married (82%) which tends to show that though, that are not highly educated, but they are very mature and can understand what exactly their environmental situation and health conditions are (Table 1, 2 and 3). Generally, the activities of Nichemtex Industry in the area generate three major wastes. These are in the forms of liquid, solid and gaseous wastes. Out of these three major generated wastes, liquid waste constitutes 51.5%, solid 13.5% and gaseous (35.0%) (Table 4). Apart from these three major generated wastes, there are other notable

environmental problems which may cause environmental related ill health as rated by the respondents in the study area. These are: air pollution, noise pollution, surface water pollution underground water pollutions, flooding, offensive odour, solid waste, effluent waste and food poisoning among others. For example, Table 5 revealed that of all the environmental problems generated by the industry, effluent waste has the highest rating (4.34), offensive odour has 4.29; polluted surface water has 4.28 while food poisoning has 4.19. The identified environmental problems in the study area have a mean ranking of 3.93 and most of the environmental problems ranked have higher figure than the mean ranking. This tends to suggest that there was a significant environmental problem in the area.

The above findings tend to support the argument made by one of the residents (Mrs. Bisi Usman) in the study area, as reported by Emmanuel M in the *Sun News* of Saturday June 30<sup>th</sup>, 2007. Mrs Bisi Usman, a resident of the Lasori (also called Abuja) community, reported that the waste chemicals is usually discharged into the village river - lesion, and that when it rains, the flood in its dark-coloured characteristics, will push the sludge from the river into homes of nearby residents. In addition this discharge came with different odours (Table 4) which in most cases will sting the eyes and nostrils. It is worth noting that, these, when taken through respiratory track may cause irritation, loss of appetite, giddiness, nausea and anorexia among others, and through lungs when these chemicals enter straight into blood stream and the general circulation could effect the living system adversely. The above reports from Mrs. Bisi Usman, could have resulted to the responses from the respondents, which is shown on the records of self reported ill health incidences, presented in Table 9. As recorded in the table, the reason for a high percentage of skin rashes among the respondent is understandable, going by the above report.

### Conclusion and Recommendations.

Having gone through literature, analysis and report, the study discovered that out of the three major types of wastes generated by the industry, liquid wastes are the highest. Effluent discharge from the industry was also rated high, followed by offensive odour and polluted waster. Attitudes of the management of the industry was found to be nonchalant and uncooperative, despite the pronounced environmental problems in the area. The various discharges from the industry were discovered to have contributed to self reported environmental related ill health among respondents; especially, the skin rashes, malaria, typhoid fever and headache among others.

The study then recommends that since textile manufacturing is a chemically intensive process, a primary focus for pollution prevention should be on substituting less-polluting chemicals for textile process. Considering the fact that, opportunities for chemical substitution vary substantially among mills because of differences in environmental conditions, process conditions, product, and new materials.

By replacing solvents for instance, facilities can reduce waste; reduce costs associated with treatment systems, and increase workers' safety. This is one of the best methods to prevent pollution. Some textile chemicals that can be substituted include desizing agents, dyes, and auxiliaries. Also, replacing enzymes with hydrogen peroxide to desize starch can be cost-effective (ATMI, 1997b). This method produces carbon dioxide and water as wastes instead of hydrolyzed starch, which increases BOD load. Copper-free dyes can again be used to reduce metal loading of wastewater, although this may sacrifice the range of color shades that can be achieved. Furthermore, improved fixation reactive can be used to reduce unreacted and degraded dye in spent bath and improve the reuse potential of wash water. High-temperature reactions can also be used in dyeing for

simultaneous application of disperse and reactive dyes. This reduces energy use and eliminates the caustic bath required after disperse dyeing. Finally, auxiliaries, such as phosphates, can be substituted with acetic acid and EDTA to reduce phosphorus load in wastewater. New washing agents can also be used to increase wash efficiency, decrease water consumption, and improve fastness of reactive (Snowden-Swan, 1995).

### References

- Adamoroti, C.M.A. (1988), Environmental Management: Case Studies on Industrial Waste Water Treatment." In P.O. Sada and F.O. Odemerho (eds): Environmental Issues and Management in Nigerian Development. (Ibadan: Evans Publishes).
- Akintunde (1992), Ibadapo (1986) and Benavidas (1982) cited in Osanyade, A (1997): Industrial Effluents on Surface Water Resources in Nigeria: An Appraisal and Review, Unpublished Manuscript, University of Benin, Benin City.
- ATMI, (1997b): Introduction to the Sector Notebook Project: Textile Industry. <http://www.epa.gov/compliance/resources/publication/sector/notes>.
- FEPA (1992): Environmental Impact Assessment Decree No.36, Supplement to Critical Gazette Extraordinary No 73: No. 179, Lagos
- Global, J.U. (1983): Industrial Development Planning and Environmental Pollution: The Case of Calabar Municipality Nigeria, Paper presented at the Nation's Conference In development and the environment NISER Ibadan.
- Otto, Z. (1980): " investigation of the Effect of Drinking water polluted by TextileIndustry's wastes on village residents" Journal of Environment and Health, 8 (5) 193-195.
- Olawuni, P.O. (2003): Environmental and Health Effects of Nichemtex Textile Industry on Residents: An Evaluative Study. In Ojo, S.O. (eds) 11<sup>th</sup> Annual Conference of Environment and Behaviour Association of Nigeria. Held at Federal University of Technology, Akure, 25<sup>th</sup> – 28<sup>th</sup> November, 2003.
- Oluwande, P.A. (1985): A Guide to Tropical Environmental Health and Engineering.
- Schwartz, N. (1995): "Short Term Fluctuations in Air Pollution and Hospital Admissions of Elderly for Respiratory Disease:.. Journal of Environment and Health. 9 (5): NISER Ibadan.
- Schwartz, N. (1995): "Short Term Fluctuations in Air Pollution and Hospital Admissions of Elderly for Respiratory Disease:.. Journal of Environment and Health. 9 (5): 123-124
- Skinner, N. (2000): Energy Management in Practice: Communities Acting of Project the Climatic. UNEP Industry and Environment. Pp 43-48
- Snowde-Swan, L.J. (1995): Introduction to the Sector Notebook project: Textile Industry. <http://www.epa.gov/compliance/resources/publication/assistance/sector/notes>.
- World Health Organization (1995): The World Health Report 1995: Bridging the Gaps (WHO, Geneva, 1995), p.9.
- Xu, F. (1989) Air Quality Guidelines for Europe, WHO Regional Office for Europe, Copenhagen.
- Zhang, S. (1995): Study of the Health Effects on Residents from Water Pollution in Weishan Lake journal of Environment and Health. 12 (5): 21-212.

### News in Bioethics & Biotechnology

<http://eubios.info/NBB.htm>

### International Bioethics Education Project News

[<http://groups.yahoo.com/group/Bioethicseducation/>](http://groups.yahoo.com/group/Bioethicseducation/)

### UNESCO Asia-Pacific School of Ethics

<http://www.unescobkk.org/index.php?id=apse>

### Asian Bioethics Association (ABA)

[www.eubios.info/ABA.htm](http://www.eubios.info/ABA.htm)



Ethics of Energy Technologies in Asia and the Pacific (EETAP) Project, RUSHSAP, UNESCO Bangkok

## **Request for Comments on the Consultation Full Draft;on-line:**

<http://www.unescobkk.org/rushsap/energyethics/>

# **Universalism and Ethical Values for the Environment**

Draft report prepared by the following persons:

Jasdev Rai\*, Amarbayasgalan Dorjderem, Darryl Macer, Celia Thorheim; Members of Working Group 1 (\*chair), Ethics of Energy Technologies in Asia and Pacific (EETAP) Project

*Draft 2 of 20 May, 2009*

*Comments to Dr. Jasdev Rai (jasdev@shrg.net) and Dr. Darryl Macer (d.macer@unesco.org)*

### **Table of Contents**

1. Are there Universal Environmental Values?
  - 1.1. Introduction
  - 1.2. Universalism
  - 1.3. Are there Universal Values Which Can Be Agreed Across The Cultures Of The World?
  - 1.4. Views of the human-environment relationship
  - 1.5. Approaches to human relationships with the environment
2. Ethical Principles in United Nations Texts and Other International Documents
  - 2.1. Values adopted in UN texts
  - 2.2. The Universal Declaration of Human Rights (UDHR)
  - 2.3. Convention Concerning the Protection of the World Cultural and Natural Heritage
  - 2.4. United Nation's Framework Convention on Climate Change (UNFCCC)
  - 2.5. The Kyoto Protocol
  - 2.6. The Earth Charter
  - 2.7. The Rio Declaration on Environment and Development
  - 2.8. Convention on Biodiversity (CBD)
  - 2.9. The Universal Declaration on Bioethics and Human Rights (UDBHR)
3. Policy Options
  - 3.1. Implications of different worldviews for treaty discussions
  - 3.2. The Need for Wider Debate inside and between Societies
  - 3.3. Methods to Resolve Conflict between Global and National Interests
4. Conclusions
5. References
6. Acknowledgements
7. Case Studies of Using Different Frameworks to Resolve Conflicting Interests.

- 7.1. Case Study: Ownership and Limitations of Rights – River Diversion and tribal homes
- 7.2. Resolving conflicts between national and local interest - Religious Tradition and Sacred Trees
- 7.3. Appendix: Agreed interpretations of words

### **Executive Summary**

This report examines whether there are universal environmental values, and the concept itself of "universalism". This question is central to current discussions on the ethics of energy technologies, as well as to environmental ethics itself. If we can agree upon international principles of environmental ethics than these can be included into economic models to develop policy that may better protect these values.

There are several views of the human-environment relationship described, such as anthropocentrism, biocentrism, ecocentrism and cosmocentrism. There is also a description of human relationships with the environment, including apathy, apocalyptic, symbiotic and integrationalist approaches. Universalism is described as a philosophy centred from Abrahamic monotheistic and western post enlightenment ideologies. In some Eastern traditions there is resistance to both the idea of divinely revealed universal truths or universal principles based on human reason. For many ordinary people in the world, universalistic ideas mark a fundamental departure from traditional outlooks.

There is a discussion of the extent to which universal values can be agreed, as well as an analysis of values implicit or explicit in UN treaties and international statements on the environment. The texts examined include the Universal Declaration of Human Rights (UDHR), the Convention Concerning the Protection of the World Cultural and Natural Heritage, United Nation's Framework Convention on Climate Change (UNFCCC), The Kyoto Protocol, The Earth Charter, The Rio Declaration on Environment and Development, the Convention on Biodiversity, and the Universal Declaration on Bioethics and Human Rights (UDBHR).

Some of the ethical values include: Human rights, State sovereignty, Sustainability, Equity, Common but differentiated responsibilities, Precaution, Participation, Vulnerability, Peace and Solidarity. However there is need for further reflection from biocentric or ecocentric viewpoints, and from wider cultural perspectives. This does not mean that human action to alleviate adverse human impact on the environment should in any way be delayed, as there is universal agreement it is a crisis for immediate action. However, further reflection on values will assist in descriptive of environmental values shared by those from non-apocalyptic visions that will allow wider global action by all in society.

There is discussion of policy options, including the implications of different worldviews for treaty discussions, and the need for wider debate inside and between societies. Methods to resolve conflict between global and national interests are discussed, with examples such as the Amazon Rainforest.

Several case studies of using different frameworks to resolve conflicting interests are given including Ownership and Rights language (river diversion and tribal homes), and Conflicts between national and local interest (Religious tradition and sacred trees).



Ethics of Energy Technologies in Asia and the Pacific (EETAP) Project, RUSHSAP, UNESCO Bangkok

## **Request for Comments on the Consultation Full Draft; on-line:**

<http://www.unescobkk.org/rushsap/energyethics/>

## **Energy Flow, Environment and Ethical Implications for Meat Production**

Draft report prepared by the following persons:

Robert A. Kanaly\*, Darryl Macer, Lea Ivy O. Manzero, Sivanandam Panneerselvam; Members of Working Group 13 (\*chair), Ethics of Energy Technologies in Asia and Pacific (EETAP) Project

*Draft 2 of 18 May, 2009*

*Comments to Dr. Robert A. Kanaly (rkanaly@yahoo.com) and Dr. Darryl Macer (d.macer@unesco.org)*

### **Table of Contents**

1. Concerns of environment and energy in regard to projected increases in meat demand in Asia
  - 1.1 Past and current trends
  - 1.2 Future projections for meat demand in Asia
  - 1.3 Energy inputs
2. Negative externalities of meat production
  - 2.1 Global climate change
  - 2.2 Land use, degradation and deforestation
  - 2.3 Water consumption and water pollution
  - 2.4 Loss of biodiversity and loss of local livestock breeds
  - 2.5 Production and dissemination of antibiotic-resistant and pathogenic bacteria in animals and food
  - 2.6 Production and dissemination of antibiotic-resistant and pathogenic bacteria in the environment
  - 2.7 Release of natural and synthetic hormones and hormone derivatives
  - 2.8 Release of ectoparasitides and derivatives
  - 2.9 Release and potential accumulation of metals and persistent organic pollutants
  - 2.10 Socioeconomic costs
  - 2.11 Transmissible disease risk
3. Industrial hog and chicken production in the Philippines
  - 3.1 Forces that drive increases in demand for meat and animal products
  - 3.2 Economics and negative externalities of hog production in the Philippines
  - 3.3 Economics and negative externalities of chicken production in the Philippines
4. Ethics of animal production
  - 4.1 Introduction
  - 4.2 Animals as food
  - 4.3 Equality of life
  - 4.4 Is there any ethical justification for killing?
  - 4.5 Luxury or necessity?
  - 4.6 Ethical issues arising from industrial meat production

4.7 The replaceability argument

4.8 Ethical issues arising from the interactions of selected meat companies in the Philippines that use industrialized production

5. Discussion and policy options

5.1 Increasing demand is expected

5.2. A Philippine case study of oversight and implementation

5.3. Policy options

6. Conclusions

7. Acknowledgements

8. References

### **Executive Summary**

Meat production is a complex and multifaceted issue that is deeply connected to matters of environment, politics, public health, economics, socioeconomics, and ethics. Future projections for the consumption of meat through 2050 indicate that an increase in demand by all countries will occur with the most significant increases projected to occur in the developing countries, especially in Asia. Countries that are considering to create, expand or integrate more intensive or industrialized modes of meat production into their current systems may want to consider the possible future environmental, energy, water, public health and socioeconomic effects of their investments.

In the developed countries, it is understood that the success of intensive meat production systems have been largely dependent upon the availability of relatively cheap fossil fuel energy as a foundation for their various models of production. It is also understood that in addition to this cheap fossil fuel energy dependence, accumulating evidence indicates that these operations often result in numerous negative externalities that have serious and wide-ranging environmental, socioeconomic and public health consequences. At the same time, many of the negative cost externalizations are necessary for the success of such intensive operations under current economic values. The societal implications of intensive animal production are also addressed.

The report presents evidence from the Philippines, Japan and other countries to describe the situation. It may be prudent for both developing and developed countries to review carefully such information as it becomes available before promoting and investing in intensive meat production operations while at the same time considering alternative or more sustainable approaches to energy efficient production and to work towards internalizing more the production costs.

This report presents an ethical analysis of principles associated with use of animals in industrial meat production. While recognizing a right to adequate food – that all people should be free from chronic hunger and all people should be free from food insecurity and have access to food of nutritional value and safe food, the report examines the perspectives from the point of view of animals and the environment as well.

This report draft does not yet include policy options, and is open to review to stimulate further improvement and encourage further contributions.



Ethics of Energy Technologies in Asia and the Pacific (EETAP) Project, RUSHSAP, UNESCO Bangkok

## **Request for Comments on the Consultation Full Draft;on-line:**

<http://www.unescobkk.org/rushsap/energyethics/>

# **Water Ethics and Water Resource Management**

Draft report prepared by the following persons:

Jie Liu\*, Nesy Daniel, Jinhua Fu, Xiaohui Lei, Huajie Liu, Darryl Macer, Qingju Qiao, Amy Sun, Keisuke Tachiyama, Yi Zheng;

Members of Working Group 14 (\*chair), Ethics of Energy Technologies in Asia and Pacific (EETAP) Project

*Draft 3 of 8 May, 2009*

*Comments to Dr. Jie Liu (jliu@coe.pku.edu.cn) and Dr. Darryl Macer (d.macer@unesco.org)*

## **Table of Contents**

1. Background
  2. Water Ethics
    - 2.1. Ethics and Water
    - 2.2. Frameworks for Water Ethics
  3. Uses of Water and Culture
    - 3.1 Water Basics
    - 3.2 Uses of Freshwater
    - 3.3 Hydroelectricity
    - 3.4 Water Stresses
    - 3.5 Culture of Water
  4. Existing Problems in Current Water Management – the Need for Water Ethics
    - 4.1 Existing Problems in Current Water Management Practices
    - 4.2 Pollution
    - 4.3 Governance models
    - 4.4 Access rights to water in practice
  5. Policy options and Construction of Practical Water Ethics
  6. Conclusion
  7. Acknowledgements
  8. References
- Annex. Case Studies

## **Executive Summary**

This report examines ethical issues associated with water resource utilization and management, including its uses in energy and other domains. Under the “Ethics of Energy Technologies in Asia and the Pacific” (EETAP) project, the Water Ethics working group has compiled case studies highlighting different ethical issues associated with water resource utilization and management. The report systematically discusses how water ethics can make a difference to water related practices to provide a cross-cultural review of the issues. The report reveals some gaps in existing knowledge to researchers, policy makers and funders of research, which could be used to examine further linkages between research and policy making, and presents areas of policy options to government policy makers.

The background to the report is presented in chapter 1. Water is the most essential substance upon which all life depends. Only the water made available for use in sufficient quantity and quality at a location over a period of time appropriate for an identifiable demand can be defined as “water resources”.

Climate change, rapid industrialization and urbanization, continuing population growth and mismanagement of water resources cause unprecedented water stresses. The second chapter of this report examines some possible ethical principles to resolve moral dilemmas involving water. The access and use of water is reviewed in the third chapter of this report. Water is at the heart of many religions and culture. Cultural traditions, indigenous practices and societal values determine how people perceive and manage water, and provide useful references for water ethics construction.

Existing problems in current water management practices are listed in the fourth chapter. Transformation of human water ethics has the potential to be far more effective, cheaper and acceptable than some existing means of “regulation”, but transformation of personal and societal ethics need time because the changes to ethical values are slow.

Policy options are discussed in the fifth chapter with some examples. This draft especially welcomes more suggestions and experience in review.

Appendices include six case studies conducted by the members of the working group from perspectives of different fields. The construction of water ethics needs joint effort and interdisciplinary collaboration from all at all levels. By following certain general principles, adopting scientific methods and tools, arousing experts, stakeholders and decision makers’ responsibility, and conducting ethical education for young people, the construction of ethically acceptable water utilization and management system can be expected to occur in the near future.

---

Ethics of Energy Technologies in Asia and the Pacific (EETAP) Project, RUSHSAP, UNESCO Bangkok

## **Call for Contributions on developing reports and other drafts is on-line:**

<http://www.unescobkk.org/rushsap/energyethics/>

### **Outline of EETAP report WG2:** **Ethical worldviews of nature**

This report will review the worldviews inherent in philosophical and religious traditions of the Asia Pacific that shape ethical relationships with the natural world. Submissions of case studies from different communities will be amalgamated into the relevant sections, with examples of how these world views can lead to different policy options.

*Key questions for each section (2-6):*

How do our worldviews allocate value and meaning to people, plants, animals and the biosphere?

Visions and hopes of the future - What is the most appropriate timescale to consider problems of environmental ethics – years, decades, centuries, or generations?

Is there a common vision of where we would like society to go beyond MDGs?

How to balance economic growth, quality of life, and other future aspirations in a holistic vision?

1. Introduction
2. Anthropocentrism
3. Biocentrism
4. Ecocentrism
5. Cosmocentrism
6. Theocentrism
7. Visions for the Future

#### 8. Policy Options

What are the relationships between such worldviews and actual decisions made by policymakers or the daily lives of the people they represent? What changes would be expected in policy if different world views were taken.

Case Studies (Some will be integrated into the relevant sections)

Please send contributions and/or outlines for contributions to:

Prof. D. Nesy (Email: [nesy.daniel@gmail.com](mailto:nesy.daniel@gmail.com)) and

Dr. Darryl Macer (Email: [d.macer@unesco.org](mailto:d.macer@unesco.org))

Ethics of Energy Technologies in Asia and the Pacific (EETAP) Project, RUSHSAP, UNESCO Bangkok

## **Call for Contributions on developing reports and other drafts is on-line:**

<http://www.unescobkk.org/rushsap/energyethics/>

### **Outline of EETAP report WG10:** **Ethical frameworks for research agendas and policy**

In its current planned form we hope to cover the issues indicated below in the report for WG10.

#### **Background**

Establishing ethical frameworks for research is not aimed at thwarting the progress of science and technology by acting as the proverbial “spanner in the wheel”. Especially during the formative years of any emerging field of technological research, ethical considerations tend to occupy the backseat due to high expectations from new, path-breaking innovations and the resultant over enthusiasm of the researchers themselves who often take care to showcase the success stories and present only the benign face of the new technology to the world. As the subject field of energy research is an emerging frontier area that is receiving the attention of scientists, technologists and innovators worldwide, major breakthroughs are regularly being made and new techniques invented. It is, therefore, a great challenge to the ethicists to keep track of these developments and to ensure that the research and applications in this field are giving due consideration to ethical principles. Ethical watchdog exercises are, therefore, all the more essential in these areas of scientific and technological research. At the same time, the ethicists themselves have to be careful to ensure that their actions and recommendations do not hinder the progress of science and technology keeping in view the needs and aspirations of present and future generations.

#### **I. Objectives**

1. To identify the priority areas that need ethical appraisal in relation to setting research agendas in policy-making relating to environmental ethics and energy technologies.

2. To assess the status of the existing ethical frameworks in these subject fields and make a strength-weakness-opportunity-threats (SWOT) analysis, using appropriate case studies, policy documents, scholarly publications, popular responses, media feedbacks and any other pertinent literature, wherever available and necessary.

3. To evolve an ethical framework on the basis of the above documents and discussions.

## II. General Terms of Reference and Framework

The terms of reference for developing such a framework that is more specifically targeted at energy technologies and environmental ethics but is broad-based enough to later apply this framework to other areas of science policy are outlined below. The sections of the report may cover:

1. Examples of research agendas and policies that illustrate respect for and responsibilities towards the environment and for achieving sustainable and equitable development. Specific issues in sustainability would be illustrated by case studies from different cultures including conservation and prudent use of forests, wetlands and other natural ecosystems and their biodiversity, Non-Timber Forest Products (NTFP), water, minerals, fossil fuels, and so on. Loss of biodiversity due to hydropower projects and biodiesel plantations deserve special attention. Respect for and recognition of intrinsic values in non-human organisms and entire ecosystems may be an integral part of research policies.

Some analysis of India's National Environmental Policy (NEP), 2006, is used here for illustrating the above aspects:

a) The word "environment" has been defined in the preamble of the policy as "all entities, natural or manmade, external to oneself, and their interrelationships, which provide value, now or perhaps in the future, to humankind. Environmental concerns relate to their degradation through actions of humans". In spite of a broad definition of environment, the accent is clearly anthropocentric, and no intrinsic value in the environment is recognized. Similar policies from other countries may be analyzed.

b) A positive aspect in NEP-India is to assess the "cost" of environmental degradation and pollution in order to "to reverse the tendency to treat these resources as "free goods" and to pass the costs of degradation to other sections of society, or to future generations of the country." The Policy proposes to introduce a system of natural resource accounting to find out whether the process of economic development is irreversibly depleting the "natural resource base of production" or enhancing it.

2. Obligation of research (and policy) to respect for human rights (and dignity) that includes economic, social, cultural and religious-spiritual rights. Many energy technologies such as hydroelectric power generation are coming into conflict with these rights and need to be resolved along more ethical guidelines. Information available from Working Group 14 (Water Ethics) on large dams would also be utilized while drafting the report. Another contentious issue here is bioethanol generation vis-à-vis food security, especially

in resource-starved and undernourished countries and communities.

3. Besides the civil-political and economic-social human rights, ethical frameworks in research and policy need to increasingly take into account a third class of human rights that has been termed as "collective-developmental rights". This may include the right to peace and a clean environment, the integrity of their cultures, languages and religions.

4. Commitment to peaceful uses of new and existing technologies. Examples include nuclear energy, organophosphates (as nerve gases), and dioxins.

5. Respect for democratic ideals and principles while setting agendas for science and technology research and policy formulation. Democracy here essentially means not only at the global level among nations, but also between different institutions, communities, genders, as well as among regions within a given country (or between in the case of regional policy making bodies).

6. Commitment to global and social justice – across and within nations, regions, languages, castes and religions.

7. Adequate attention to livelihood concerns, especially of poor, marginal and 'ecosystem people' who live close to the land.

Issues involved here are those relating to mega-projects that violate the subsistence rights and means of poor and marginal people. An anthropocentric view of environment and development often ignores the rights of such people, as their numbers are usually less. The "interest of the majority" or "greater interest" often overrides such marginal rights.

8. Respect for traditional knowledge (TK) and Community IPR – ensuring and evolving benefit-sharing mechanisms. Maintaining intellectual honesty and imparting distributive justice.

9. Using entire life cycle analysis for ethical assessment of technologies used to inform research agendas and policy. For instance, nuclear energy involves environmental and health hazards at the initial stage of uranium mining and processing and at the end stage of spent fuel storage. Or, the loss of carbon sink in the form of dense tropical forest versus the reduction in greenhouse gas emissions brought about by a hydroelectric power project need to be carefully weighed and evaluated.

10. Funding priorities to projects attempting to assist the research community (and others) address problems relevant for the poor and underprivileged.

11. Providing a sound philosophical foundation to research agenda and policy. Martin Heidegger's analysis of technology as "revealing/ bringing forth" vs. "enframing" could perhaps provide a philosophical base for the discussions. Also the concept of 'human dignity' vs. dignity of non-human species and systems as put forward by some scholars is relevant in an Asia-Pacific context. Other philosophies/ worldviews, including indigenous worldviews, need to be examined.

### III. Annexures

Important documents, a few cited here as examples, could be added as further links.

1. The UNESCO-COMEST Precautionary Principle (2005) [also see: <http://unesdoc.unesco.org/images/0013/001395/139578e.pdf>]

2. *Guidelines for Research Ethics in Science and Technology*, prepared by the National Committee for Research Ethics in Science and Technology (NENT), Government of Norway. This document was drawn up in 2005, and revised in 2007 after a consultative process.

3. *Ethics of Climate Change: Exploring the principle of equal emission rights*, published by the Norwegian Academy of Technological Sciences (NTVA) in 2007.

4. The *Vancouver Convention*: [<http://www.icmje.org/index.html>]

5. *World Conference on Science*, 2000 [<http://www.unesco.org/science/wcs>]

6. *ICSU*, 2002. Report on the Study Group on *Science and Traditional Knowledge* [[http://www.icsu.org/2\\_resourcecentre/RESOURCE\\_list\\_base.php4?rub=7](http://www.icsu.org/2_resourcecentre/RESOURCE_list_base.php4?rub=7)]

7. National Environmental Policy, 2006. Govt. of India, Ministry of Environment & Forests (Approved by the Union Cabinet on 18<sup>th</sup> May, 2006).

Please send comments and suggestions to:  
Prof. Abhik Gupta (chair): [abhik.eco@gmail.com](mailto:abhik.eco@gmail.com)  
and to:  
Dr. Darryl Macer: [rushsap\(at\)unescoibkk.org](mailto:rushsap(at)unescoibkk.org)

### Conferences

For a list of some ethics meetings in Asia and Pacific:  
[http://www.unescoibkk.org/index.php?id=current\\_and\\_future\\_events](http://www.unescoibkk.org/index.php?id=current_and_future_events)

If contact is unmarked please contact:  
[rushsap@unescoibkk.org](mailto:rushsap@unescoibkk.org)

*High level Conference on Teaching of Philosophy in Asia and the Pacific*, 25-26 May 2009, Manila, Philippines.

*UNESCO Asia-Arab Inter-regional Philosophical Dialogues: The Crisis of Civilization*, 28-30 May 2009, Bangkok, Thailand.

*Ordinary Session of the World Commission on the Ethics of Scientific Knowledge and Technology (COMEST) and Satellite events*, 15-19 June 2009, Kuala Lumpur, Malaysia.

*Consultation Review of Ethics of Energy Technologies (EETAP) projects*, 25 August, 2009, Bangkok

*Nanoethics Asia (NEA2009)*, August 26 – 28, 2009, Chulalongkorn University, Thailand. Contact: Dr. Soraj Hongladarom, Center for Ethics of Science and Technology, Department of Philosophy, Faculty of

Arts, Chulalongkorn University. Email: [s.hongladarom@gmail.com](mailto:s.hongladarom@gmail.com)

**Website:** <http://www.stc.arts.chula.ac.th/NEA2009/>

*Third Joint UNESCO-Kumamoto University Bioethics Roundtable: What is Medical?*, 12-13 December, 2009, Kumamoto, Japan. Contact: Prof. T. Takahashi, Kumamoto University, Japan. Email: [ttaka@kumamoto-u.ac.jp](mailto:ttaka@kumamoto-u.ac.jp)

*Eleventh Asian Bioethics Conference (ABC11), and the Fifth UNESCO Asia-Pacific School of Ethics Bioethics Roundtable*, 31 July – 2 August, 2010, Singapore. (In conjunction with the Tenth International Congress of Bioethics, 27-31 July 2010).

### Send papers to EJAIB Editorial Office

Editorial address:

Prof. Darryl Macer

RUSHSAP, UNESCO Bangkok,

920 Sukhumvit Rd, Prakanong,

Bangkok 10110, THAILAND

Fax: Int+66-2-664-3772

Email: [asianbioethics@yahoo.co.nz](mailto:asianbioethics@yahoo.co.nz)

[d.macer@unescoibkk.org](mailto:d.macer@unescoibkk.org)

**Send papers to the editor in electronic form if possible.** Please use numbered reference style, do not use automatic footnotes or endnotes. Papers are peer reviewed.

The journal is independent of UNESCO and the contents are not endorsed by either Eubios Ethics Institute or UNESCO, but are published in the spirit of academic freedom.

**EJAIB Editor:** Darryl Macer

#### Associate Editors

Jayapaul Azariah (All India Bioethics Association, India),

Masahiro Morioka (Osaka Prefectural University, Japan).

**Managing Editor:** Nobuko Yasuhara Macer

**Editorial Board:** Akira Akabayashi (Japan), Sahin Aksoy (Turkey), Angeles Tan Alora (Philippines), Atsushi Asai (Japan), Alireza Bagheri (Iran), Gerhold Becker (Germany), Hasna Begum (Bangladesh), Minakshi Bhardwaj (UK), Christian Byk (IALES; France), Ken Daniels (New Zealand), Leonardo de Castro (The Philippines), Ole Doering (Germany), Norio Fujiki (MURS Japan), Tran Han Giang (Vietnam), Thomas Gionis (USA), Dena Hsin (Taiwan), Rihito Kimura (Japan), Abby Lippman (Canada), Margaret Lock (Canada), H. Ahmad Ludjito (Indonesia), V. Manickavel (Nepal), Anwar Nasim (Pakistan), Mary Ann Chen Ng, (Philippines), Jing-Bao Nie (China, New Zealand), Pinit Ratanakul (Thailand), Qiu Ren Zong (China), Hyakudai Sakamoto (Japan), Sang-yong Song (Korea); Noritoshi Tanida (Japan), A.K. Tharien (India), Yanguang Wang (China), Daniel Wikler (USA), Jeong Ro Yoon (South Korea).

# ASIAN BIOETHICS ASSOCIATION MEMBERSHIP 2009

<<http://eubios.info/ABA.htm>>

## and ASSOCIATE MEMBERSHIP IN EUBIOS ETHICS INSTITUTE 2009

I wish to pay my annual membership fees of Asian Bioethics Association (ABA), and receive the 2009 issues of *Eubios Journal of Asian and International Bioethics (EJAIB)* (The Official Journal).

Regular Price: US\$50 Euro 40 UK£30 NZ\$60 A\$60 C\$60 ¥5000 (=Credit card price NZ\$90)

I wish to make a reduced contribution of \_\_\_\_\_

I wish to register as a member of Asian Bioethics Association, but am not in the position to pay a fee. I understand that I should be satisfied with Internet access to *Eubios Journal of Asian and International Bioethics (EJAIB)* <<http://eubios.info/EJAIB.htm>>.

I wish to apply to become an associate member of Eubios Ethics Institute for the year 2009. This includes the 2009 issues of *EJAIB*, and a 10% discount on book and CD sales at this time. It is no additional charge for members of Asian Bioethics Association. For other persons the price is:

Regular Price: US\$40 Euro 35 UK£20 NZ\$50 A\$50 C\$50 ¥4000 Overseas price NZ\$70

Exchange subscription with journal, newsletter, etc. (Name \_\_\_\_\_ )

I agree /  do not agree to my name being listed on the Eubios www site for the: ABA and/or Genetics and Bioethics Network (circle one or both) (send also tel/fax/Email):

Yes  Signature: \_\_\_\_\_

List Interests to be included in network list on <<http://eubios.info/GBNads.htm>>

I order the following Eubios Ethics Institute books

**Post or Fax or send an Email with your address\*** (or include current address label)

**to:** Prof. Darryl Macer,  
Eubios Ethics Institute, 31 Colwyn Street, Christchurch 8005, New Zealand  
Fax: Int+66-2-664-3772 Email: [asianbioethics@yahoo.co.nz](mailto:asianbioethics@yahoo.co.nz)

Please find my cheque for: \_\_\_\_\_

*Note: Cheques in local currency are accepted from accounts with major banks in Australia, Canada, EU, New Zealand, USA, U.K.* (The currency has to be the same as the address of the bank, and the cheque made out to "Eubios Ethics Institute"). Other currencies use a bank or post draft in **NZ\$ for the Overseas price**. In **Japan** use postal transfer to the "Eubios Ethics Institute" account 00340-9-32465.

Or authorize a one time **credit card** payment as below:

Please charge my VISA / MASTERCARD card (circle) for **NZ\$** \_\_\_\_\_ \*\*

Account # \_\_\_\_\_ Expiry Date \_\_\_\_\_

Signature \_\_\_\_\_ Name: \_\_\_\_\_

\*Mailing address: \_\_\_\_\_

**Email:** \_\_\_\_\_ **Fax:** \_\_\_\_\_

\*\* Other Eubios books / CD may be ordered with 25% discount at the time of renewing the subscription.

**Fax to:** Prof. Darryl Macer, Fax Int+66-2-664-3772 (or send by Email or post)